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Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
LIBRARY OF CONGRESS
Washington, D.C.

In re **Determination of Rates and Terms for Digital Performance of Sound Recordings and Making of Ephemeral Copies to Facilitate those Performances (*Web V*)**	**Docket No. 19-CRB-0005-WR (2021-2025)**

SOUNDEXCHANGE'S REPLIES TO PANDORA AND SIRIUS XM'S CORRECTED PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

October 28, 2020

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SoundExchange respectfully submits the following reply to Pandora and Sirius XM's proposed findings of fact and conclusions of law.

I. SUMMARY OF PANDORA AND SIRIUS XM'S PROPOSED RATES AND TERMS (AS AMENDED)

Response to ¶ 1. The Judges should reject the royalty rates and terms proposed by Pandora and Sirius XM and instead adopt the royalty rates and terms proposed by SoundExchange. SoundExchange Proposed Rates and Terms at 7-22 (filed Sept. 23, 2019).

A. Pandora and Sirius XM's Proposed Rates

Response to ¶ 2. SoundExchange agrees that the royalty rate set in this proceeding should be adjusted annually to reflect general price levels as measured by the Consumer Price Index. *See* SX Reply to NAB PFFCL ¶ 208 (noting that all participants except NAB, and all economists addressing the matter except Dr. Leonard, agree with this approach). SoundExchange otherwise disagrees with the assertions in this paragraph and incorporates its response to ¶ 1 *supra*.

B. Pandora and Sirius XM's Proposed Terms

Response to ¶ 3. SoundExchange incorporates its response to ¶ 1 *supra*.

Response to ¶ 4. Pandora and Sirius XM have failed to come forward with sufficient evidence justifying their proposed treatment of unclaimed funds. *See infra* Resp. to ¶¶ 250-52. The Judges should instead adopt SoundExchange's proposed rule concerning the disposition of unclaimed funds. *See* SX PFFCL ¶¶ 1685-94.

Response to ¶ 5. Pandora and Sirius XM have failed to come forward with sufficient evidence justifying their proposed deadlines for audit completion. *See* SX PFFCL ¶¶ 1661-63; SX Reply to JPFFCL ¶¶ 341-42. The Judges should instead adopt SoundExchange's proposals for intermediate deadlines to keep the audit process moving forward. *See* SX PFFCL ¶¶ 1623-30.

Response to ¶ 6. Pandora and Sirius XM have failed to come forward with sufficient evidence justifying their proposals to (1) slash the late fee applicable to late payments discovered in audits, and (2) provide a credit if an audit reveals a net overpayment (which has never happened). *See* SX PFFCL ¶¶ 1591-1618, 1656-60; SX Reply to JPFFCL ¶¶ 328-38. The Judges should instead adopt SoundExchange's proposal to continue the current language of § 380.6(g) with minor changes to conform to the PSS/SDARS regulations. SoundExchange Proposed Rates and Terms at 7-20; *see* SX PFFCL ¶¶ 1579-83.

II. FACTUAL BACKGROUND

A. Pandora and Its Product Offerings

i. Pandora's Ad-Supported Music Service

Response to ¶ 7. No response.

Response to ¶ 8. Pandora relies on the say-so of one witness here. It offers no empirical basis to find that the ad-supported service plays a "vital role" in the marketplace or to find that users familiar with marketplace options prefer lean-back listening on Pandora to functionality (including lean-back listening) on interactive services. Market evidence, empirics, internal research and testimony suggest the ad-supported service substitutes for more compensatory forms of listening. *See, e.g.*, SX PFFCL ¶¶ 158, 162-66, 196, 710-11; Ex. 4095, Tbls. 3-4, 7-8 (Hanssens CWDT); Ex. 5606, Figs. 8-9 (Zauberman WDT); Ex. 5608, Table 4B (Simonson CWRT); 8/31/20 Tr. 4630:24-4631:5 (Phillips) (acknowledging research indicating that Pandora listeners have growing need and desire for interactive features and market trend towards on-demand listening).

Response to ¶¶ 9-11. No response.

Response to ¶ 12. SoundExchange has not investigated, and so takes no position on, whether Pandora's playlists comply with the sound recording performance complement.

Response to ¶¶ 13-15. No response.

ii. Pandora's Development of Interactive Product Offerings

Response to ¶¶ 16-17. No Response.

Response to ¶ 18. There is no evidence this additional functionality has increased the value attached to Pandora Plus in the downstream market. *See* SX Reply to JPFFCL ¶¶ 168-71; SX PFFCL ¶¶ 149-55.

Response to ¶ 19. No response.

Response to ¶ 20. Pandora provides no support for claims concerning the number of listeners who allegedly lack willingness to pay for a music subscription, and there is no rigid dichotomy between listeners who have and lack willingness to pay for a music subscription. *See* SX Reply to JPFFCL ¶ 32. Moreover, listeners on Pandora's ad-supported service have a revealed preference for music listening, and these listeners pay for music streaming in the form of time spent listening to ads. *See* 8/12/20 Tr. 1548:18-22 (Orszag); *see also* SX PFFCL ¶ 159.

Response to ¶ 21. Pandora offers no negotiation documents or testimony from negotiators to support the assertion that anti-steering provisions were "required" rather than bargained for. The assertion is belied by [ ] anti-steering provisions and questions about whether [ ]. *See* SX PFFCL ¶¶ 388-90. The assertion is also belied by Pandora's considerable leverage in negotiations, the reasons for which include that [ ]. *Cf.* Ex. 5609 ¶¶ 74, 79 (Harrison WDT); Ex. 5611 ¶ 22 (Adadevoh WDT); Ex. 5613 ¶ 55 (Piibe WDT).

Response to ¶ 22. No response.

Response to ¶ 23. There is no evidence in the record that Premium Access has improved Pandora's monetization, beyond Mr. Phillips' claim that it "allows" Pandora to do so. *See* Ex. 4090 ¶ 26 (Phillips WDT). Nor does the cited portion of the transcript say anything about monetization.

Response to ¶ 24. No response.

iii. Pandora's Efforts to Maximize Advertising Revenue

Response to ¶¶ 25-28. No response.

iv. Pandora's Acquisition by Sirius XM

Response to ¶¶ 29-30. No response.

Response to ¶ 31. Sirius XM presents only a partial picture of Pandora's SEC-filed Merger Proxy statement, which was intended to help shareholders assess the potential acquisition of Pandora by Sirius XM. *See* SX PFFCL ¶ 659; Ex. 5045; *see also* SX Reply to JPFFCL ¶ 283; *infra* Resp. to ¶ 152. In preparation, Pandora created [ ] disclosed and used for the fairness opinions contained in the Merger Proxy statement. *See* SX PFFCL ¶ 665. Scenario 2, which Professor Willig used, was more optimistic than Scenario 1a—[ ]. *See* SX PFFCL ¶ 665. Professor Willig used the [ ] scenario because its resulting valuation estimates best aligned with the actual price paid by Sirius XM to acquire Pandora. *See* SX PFFCL ¶ 666.

Response to ¶ 32. As Sirius XM testimony has revealed, [ ]. *See* SX PFFCL ¶ 661; *see also, e.g.*, 8/31/20 Tr. 4694:21-4695:21 (Ryan). It was not prepared by a CPA, was never audited, and was prepared only for Pandora's internal use. 8/31/20 Tr. 4690:17-4691:17 (Ryan). In any event, as Professor Willig highlighted at trial, [ ]. SX PFFCL ¶¶ 663-64. [ ] 8/19/20 Tr. 2734:10-23 (Shapiro); *see also* SX PFFCL ¶ 664. To the extent Pandora raises [ ] to suggest that Pandora's financial position is not strong, such evidence is irrelevant. *See* SX PFFCL ¶¶ 1292-94.

B. Sirius XM, Its Product Offering, and Its Role in the Marketplace

Response to ¶¶ 33-34. No response.

i. Sirius XM's Programming

Response to ¶¶ 35-40. No response.

ii. Sirius XM's Role in the Music Streaming Market

Response to ¶ 41. No response.

Response to ¶ 42. Whether or not Sirius XM "seeks" to compete with interactive music streaming through the development of its internet radio product is irrelevant. The question is whether it does compete. Sirius XM's claim that its complementarity to on-demand services is "well-documented in survey data" is not supported by the record. First, Sirius XM's citations reveal that the "survey data" in question is a single document (Exhibit 5005). The document is at odds with considerable evidence of substitution. *See, e.g.*, SX PFFCL ¶¶ 710-11; Ex. 4095 ¶ 74, Table 7 (Hanssens CWDT); Ex. 5606 ¶ 74, Fig. 9 (Zauberman WDT). Second, the cited document does not reliably address whether Sirius XM's internet radio product is complementary. For example, it does not break out results for listeners to Sirius XM's internet radio product, much less provide evidence that the availability of Sirius XM internet streaming is not "stand[ing] in the way of consumers' paying for other music services." Indeed, given that interactive streaming now offers increasing lean-back listening options, Ex. 5602 ¶ 57 (Orszag WDT), the risk that other lean-back listening options may substitute for interactive services has only increased.

Response to ¶ 43. There is no evidence that Sirius XM is more promotional than terrestrial radio or interactive streaming. *See* SX PFFCL ¶¶ 505-13; Ex. 5615 (Ford WRT). In addition, even if Sirius XM drives some amount of on-demand music consumption, it does not follow that Sirius XM is promotional rather than substitutional for on-demand music consumption. *See* SX PFFCL ¶¶ 514-17. The anecdotal evidence that some artists, artist managers, and record companies seek

airplay on Sirius XM is not informative because it says nothing about absolute or relative promotional effects. *See id.* ¶¶ 514-29.

Response to ¶ 44. No response.

Response to ¶ 45. The cited initiatives—which are detached from the statutory license, feature well-established artists, and confer significant benefits on Sirius XM—do not shed light on whether Sirius XM creates absolute or relative promotional effects. *See* SX PFFCL ¶ 546; Ex. 5615 ¶ 40 (Ford WRT). The same is true for Sirius XM's anecdotes, which are irrelevant, *see* SX PFFCL ¶¶ 530, 543-44, and overstated. Ex. 5615 ¶¶ 42-57 (Ford WRT); SX PFFCL ¶¶ 547-50.

Response to ¶ 46. This is misdirection. Although on-demand listeners have the option to view or skip songs on a playlist, they are not required to do so. Users on Spotify can, if they so choose, have the same experience that Sirius XM claims is unique to its platform. *See, e.g.*, Ex. 5602 ¶ 61 (Orszag WDT). This is consistent with the general trend of convergence between the interactive and noninteractive markets. *See* SX PFFCL ¶¶ 78-85.

C. The Streaming Market Today

i. Substitution Between Sirius XM, Pandora, and Interactive Streaming

Response to ¶ 47. Sirius XM's claim in this paragraph and in its Header II.C.i that Pandora and Sirius XM complement rather than substitute for on-demand streaming is unsupported by the record, particularly in light of the convergence between the interactive and noninteractive markets in terms of lean-back listening. *See, e.g.*, SX PFFCL ¶¶ 78-85; *supra* Resp. to ¶¶ 8, 42. Listeners now can and do satisfy their desire for lean-back listening on interactive streaming services. Ex. 5602 ¶ 61 (Orszag WDT). As a result, there is significant potential for substitution, which is borne out by evidence in this case, including the surveys conducted by Professors Hanssens, Simonson, and Zauberman. *See, e.g.*, SX PFFCL ¶ 755, Fig. 19. Sirius XM's conclusory assertions to the contrary cannot overcome that evidence.

Response to ¶¶ 48-49. SoundExchange incorporates its responses to ¶¶ 8, 42, 46-47 *supra*.

Response to ¶ 50. SoundExchange incorporates its responses to ¶¶ 8, 20 *supra*, and notes that evidence of overlapping listenership is not relevant. The key question is where Pandora users would go if the service were not available or, put differently, whether Pandora substitutes for more lucrative forms of listening. The record demonstrates that it does. *See supra* Resp. to ¶ 8.

Response to ¶ 51. Most or all of features that Sirius XM mentions are available on interactive services. As a result, there is no basis to conclude that, because Sirius XM users apparently value qualities like commercial-free music, exclusive and varied programming, or convenience and ease of use, they are less likely to be interested in interactive services.

Sirius XM also claims that its subscribers churn because of price more than functionality. That statement is based on the testimony of Mr. Blatter, who relied on an unidentified "recent survey." Ex. 4093 ¶ 17 (Blatter WDT). However, the statement of an employee responsible for programming, and based on unidentified documents that are not in evidence, is not credible. Moreover, users may well have been churning from Sirius XM plans that are more expensive than on-demand subscription services. *Cf.* SXM PFFCL ¶ 37. Additionally, users may have several reasons for churning. And third, it does not capture what listeners do after churning. Even if users were motivated to churn by price more than functionality, users might seek out their preferred features on interactive services, which offer the same-lean back experience, plus on-demand functionality, at a lower price point. *See* Resp. to ¶¶ 42, 46-47.

Response to ¶ 52. Sirius XM leaps from the fact that Sirius XM and Pandora users may listen to multiple digital music services to the conclusion that users must view Sirius XM and Pandora as complements to interactive listening, not substitutes. That conclusion does not follow, for several reasons. *First,* the fact that listeners use multiple services says nothing about how much

they listen to each, when they listen to each, why they listen to each, or, most importantly, what they would do if Pandora or Sirius XM streaming were not available. *Supra* Resp. to ¶¶ 8, 42, 46-47. In fact, the research that Sirius XM cites notes that listener behavior is [ ] Ex. 4001 at 3-4. *Second*, Sirius XM's conclusion rests on the faulty assumption that if a user uses multiple services, those services must be complements. If that were so, it would be difficult to reconcile the fact that Pandora views terrestrial radio as a substitute to its service with the fact that [ ]. *Compare* SXM PFFCL ¶ 50 (noting that terrestrial radio "remains Pandora's principal source of competition for listeners"), *with* Ex. 4001 at 10.

ii. Record Industry Revenues

Response to ¶¶ 53-56. No response.

iii. Price Competition

Response to ¶ 57. The Judges have never ruled on whether the 2017 agreements executed between the major record companies and Spotify (the "Benchmark Agreements") reflect the forces of effective competition. SX PFFCL ¶ 262. In fact, the Benchmark Agreements were not even a part of the record in *Web IV*, *SDARS III*, or *Phonorecords III*, nor have the Judges ever had access to comprehensive evidence about the conduct of their negotiations. *See, e.g.*, 8/12/20 Tr. 1644:19-1645:2 (Orszag); SX Reply to JPFFCL ¶¶ 58-60. As the Judges noted in *Web IV*, the effective competition determination must be made "on a case-by-case basis, from the evidence and testimony adduced at the hearing." 81 Fed. Reg. at 26343.

Response to ¶ 58. This finding does not bear on whether royalty rates in the Benchmark Agreements reflect effective competition, given the record in this case. SX PFFCL ¶¶ 259-493.

Response to ¶ 59. By omitting the holding to which their final citation actually refers, and omitting portions of language they quote, Sirius XM paints a misleading portrait of the *Web IV*

decision. Although the Judges noted that "[p]rice competition through steering does not diminish the stand-along monopoly value of any one sound recording" or "of each Major's repertoire taken as a whole," they flatly rejected the need for a competition adjustment based on that market power, as there was no evidence it was being used to diminish competition or was otherwise improper. *Web IV*, 81 Fed. Reg. at 26368. It is *that* holding which "must not be confused with the Judges' holding regarding the anticompetitive effects of complementary oligopoly that exists among the Majors." None of the language Sirius XM cites limited the Judges' conclusion that services "could inject price competition via steering." *Id.* at 26343. That would be clear had Sirius XM not truncated the final quote in their proposed finding, which reads in relevant part: "Because the Majors could utilize their combined market power to prevent price competition among them by virtue of their complementary oligopoly power—as proven by the evidence of the pro-competitive effects of steering and the admissions of Universal and its agents—the Judges *must establish rates that reflect steering, in order to reflect an 'effectively competitive' market*." *Id.* (emphasis added).

Finally, and as the Judges explicitly recognized in *SDARS III*, playlists created by interactive services can facilitate steering and result in the reduction of royalty rates, including without any steering taking place. *SDARS III*, 83 Fed. Reg. 65247 n.152. Although there was no evidence of steering-based price competition as a result of playlists on interactive services in the *SDARS III* record, [[redacted]]. SX PFFCL ¶¶ 398-456.

Response to ¶ 60. While the "mere existence" of record company negotiations may not be particularly informative as to the existence of effective competition, the specifics of those negotiations certainly are. *See, e.g.*, SX PFFCL ¶¶ 412-56. Consistent with the Judges' dictate in *Web IV*, those specifics must be examined on a case-by-case basis. *Web IV*, 81 Fed. Reg. at 26343.

[redacted]. SX PFFCL ¶¶ 297-486.

Response to ¶ 61. The testimony from *Web IV* is not part of the record here, nor is it consistent with the evidence in this case. *See, e.g.*, SX PFFCL ¶¶ 398-404; SX Reply to JPFFCL ¶¶ 63-108, 138-61.

Response to ¶ 62. [redacted], SX PFFCL ¶¶ 298-345, and because [redacted]. *Id.* ¶¶ 346-486; SX Reply to JPFFCL ¶¶ 91, 138-47, 151-56. Indeed, there is ample evidence that [redacted], SX PFFCL ¶¶ 421, 423, 433, 442-43, [redacted]. SX PFFCL ¶¶ 398-456; SX Reply to JPFFCL ¶¶ 14, 91. [redacted]. SX Reply to JPFFCL ¶¶ 151-56; SX PFFCL ¶¶ 385-97, 478-82.

Response to ¶ 63. [redacted]. *See supra* Resp. to ¶¶ 212-14; SX Reply to JPFFCL ¶¶ 63-161; *see also* SX PFFCL ¶¶ 259-493.

III. PANDORA AND SIRIUS XM'S EXPERIMENTAL AND SURVEY EVIDENCE

Response to ¶ 64. A cadre of renowned experts have testified unequivocally that the LSEs are not a valid measure of how listeners would behave in response to a blackout of a major label. SX PFFCL ¶¶ 852-940 (citing testimonies of Willig, Tucker, Zauberman, and Simonson). The LSEs' flawed experimental design, which doomed the experiments from the start, was compounded by multiple implementation errors. SX PFFCL ¶¶ 852-96. Professor Shapiro's reliance on the LSE results – which are inconsistent with other empirical evidence from consumer

surveys – is one of several major flaws that undermines the validity of his opportunity cost analysis. *See, e.g.*, Ex. 5601 ¶¶ 6, 28 (Willig WRT); Ex. 5605 ¶ 103 (Tucker CWRT); SX PFFCL ¶¶ 845, 941-62 (Shapiro's analysis does not reflect the true effect of a blackout, Pandora's willingness to pay, or a record company's opportunity cost).

The Hanssens Pandora Survey provides a far better, if still imperfect, input for Professor Shapiro's analysis. But the results of that survey do not help Pandora. The Hanssens Pandora Survey, like the surveys conducted by SoundExchange's witnesses, found significant switching; this result is in conflict with the results of the LSEs, which detected virtually no change in consumer behavior. SX PFFCL ¶¶ 856, 931-40. Professor Hanssens' findings are yet another indication that the LSEs are unreliable and uninformative. *Id.*

A. The Label Suppression Experiments

Response to ¶¶ 65-66. No response.

Response to ¶ 67. At trial, SoundExchange's experts explained that no one type of experimental design is universally superior to others in terms of predicting consumer behavior. *See, e.g.*, 8/17/20 Tr. 2276:2-2277:5 (Tucker). Rather, the ecological validity of an experiment depends on whether it is "conducted in a way which would allow you to actually predict what would happen in real life." 8/17/20 Tr. 2276:9-2277:5 (Tucker); Ex. 5608 ¶ 23-24 (Simonson CWRT); *see also* SX PFFCL ¶¶ 857-59.

Dr. Reiley's claim that controlled field experiments are the "best method for determining the causal impact of [a] manipulated experience" is beside the point. The LSEs did not set out to measure the impact of the treatment as it was applied (i.e. the manipulated experience). Rather, for the LSEs to meaningfully inform Professor Shapiro's analysis, they had to accurately "measure the response of Pandora listeners if Pandora advertising-supported statutory service were to lose access to the music of a given record company." Ex. 4091 App. A (Reiley CWDT). This is where

Dr. Reiley's experiments "thoroughly failed." 8/27/20 Tr. 4215:10-11 (Zauberman); *see also* 8/17/20 Tr. 2276:15-16 (Tucker). As Professor Tucker testified, "you can always measure *something* with a field experiment" but that does not make the measurement informative or useful. 8/17/20 Tr. 2276:5-6 (Tucker) (emphasis added). In this case, Dr. Reiley's LSEs might measure whether or not consumers "are able to detect covertly suppressed content in a noisy environment" but they "definitely [do] not match how individual consumers would make a decision in this context" in the real world. 8/27/20 Tr. 4268-4269:10 (Zauberman).

The LSEs provide a textbook example of why a one-size-fits-all approach does not work. Despite being "controlled experiments" within an A/B framework, the LSEs provide no scientifically valid information relevant to the question of interest. 8/27/20 Tr. 4261:10-16 (Zauberman). Dr. Reiley's decision to keep listeners "blind" to the experiment made it impossible for the LSEs to capture information about listeners' real-world responses to label suppression. 8/17/20 Tr. 2279:11-2280:25 (Tucker). And, critically, the LSEs could not capture any competitive effects. SX PFFCL ¶¶ 860-64.

Pandora's contention that it prefers blind studies "for scientific reasons" is incomplete at best. As Dr. Reiley's testimony articulates, other concerns motivated his experimental design. Chief among these considerations was Pandora's fear that suppressing a major label could be "catastrophically bad" for Pandora's business. 9/1/20 Tr. 4979:5-80:6 (Reiley); Ex. 4091 ¶ 16 (Reiley CWDT). The evidence also suggests that this decision may not have been entirely in Dr. Reiley's control. Dr. Reiley testified that the experimental design, including the decision to limit the sample size for the [[redacted]] treatment groups, was dictated by Professor Shapiro's instructions and guided by input from Professor Shapiro and counsel. Ex. 4091 ¶¶ 4, 12, 16, App. A (Reiley CWDT); 9/1/20 Tr. 4899:5-9, 4970:2-4979:10 (Reiley). Consequently, the experimental

design choices did not perfectly align with Dr. Reiley's preferences. *See, e.g.*, *id.* at 4976:18-4978:12 (decision not to include [redacted] as treatment groups); *id.* at 4979:1-16 (testifying that he would want a bigger sample size if that were an option). Dr. Reiley also testified that some design elements were essentially defaults based on Pandora's typical practices. *Id.* at 4988:25-4989:24 (discussing caps on daily hours and tracks). What Pandora should have, but apparently did not, consider was whether a blind experiment would best approximate real world conditions necessary to answer the question of interest in this context. SX PFFCL ¶¶ 857-77.

Response to ¶ 68. SoundExchange incorporates it Response to ¶ 67, *supra*. SoundExchange also notes that the relative merit of a "[p]roperly designed and executed" A/B experiment is wholly irrelevant here. The only experimental evidence at issue in this proceeding are the LSEs, which—as discussed in SX PFFCL ¶¶ 850-962—exhibit design and execution errors that make them irreparably flawed. *See also* Ex. 5601 ¶¶ 22-27 (Willig WRT); Ex. 5605 ¶ 12 (Tucker CWRT); Ex. 5607 ¶¶ 23-25 (Zauberman WRT); Ex. 5608 ¶ 21 (Simonson CWRT).

Response to ¶ 69. The suggestion that the LSEs provide the "most rigorous" data available borders on the absurd. The weight of the evidence shows that the LSEs are "absolutely not" a reliable source of evidence for use in Pandora's economic analysis. 8/5/20 Tr. 570:2-571:16, 572:18-574:9 (Willig). SoundExchange incorporates its Responses to ¶¶ 67-68, *supra* and SX PFFCL ¶¶ 850-962.

i. Methodology

Response to ¶ 70. No response.

Response to ¶ 71. SoundExchange incorporates SX PFFCL ¶¶ 880-96 (due to implementation errors, a significant number of songs that should have been suppressed were not).

Response to ¶ 72. The small sample sizes used in the [redacted] treatment groups were motivated by business considerations, as well as instructions from Pandora's economic witnesses

and counsel. Ex. 4091 ¶¶ 4, 12, 16, App. A (Reiley CWDT); 9/1/20 Tr. 4899:5-9, 4978:17-4280:6 (Reiley); *see also* Resp. to ¶ 67, *supra*. It is not obvious that listeners were representative and results were not impacted by any factors other than the treatment because it was not possible to catch all such errors and determine their cause in the data made available by Dr. Reiley. 9/1/20 Tr. 4959:11-4960:4 (Reiley). Dr. Reiley acknowledged that there could be additional underlying data issues that he did not know about, and that not all data integrity problems at Pandora are observable to him. 9/1/20 Tr. 4960:5-16 (Reiley).

Response to ¶ 73. SoundExchange incorporates SX PFFCL ¶¶ 908-912 (establishing that LSEs are underpowered). *See also* 9/1/20 Tr. 4980:7-22 (Reiley) (testifying that the goal of the LSEs was not to measure the exact change in listening hours, but to get an "adequate measurement" to detect if there was a "big change in listening" hours, such as a 50% increase or decrease).

Response to ¶¶ 74-75. No response.

ii. Three-Month LSE Results

Response to ¶ 76. No response.

Response to ¶ 77. Pandora's incorrect assertion that Dr. Reiley succeeded in "near-total suppression" ignores the multiple implementation errors that led to significant leakage of songs that should have been suppressed. *See* SX PFFCL ¶¶ 855, 880-96. For the [ ] treatment group, for instance, Dr. Reiley suppressed less than [ ] tracks that should have been suppressed. SX PFFCL ¶ 892 (citing Ex. 4091 ¶ 34 (Reiley CWDT); Ex. 5605 ¶ 70, App. 1 (Tucker CWRT)). The extent of suppression failure in the [ ] treatment group appears to be even greater. *See* Resp. to ¶ 93, *infra*. Pandora's claim in footnote 7, that the results of the LSEs are "generally consistent" with the McBride steering experiments, makes no sense. SoundExchange incorporates SX PFFCL ¶¶ 958-62, which articulate why making an apples to oranges comparison with the McBride experiments cannot provide scientifically valid information.

Response to ¶ 78. Dr. Reiley reaches his conclusion regarding potential loss of listening hours by layering one flawed assumption on top of another. But Dr. Reiley's self-proclaimed "best guess" regarding the long-term impacts of the LSEs is just that—a guess. 9/1/20 Tr. 4910:16-4911:5 (Reiley) (conceding that he cannot measure long-term effects without running the LSEs "for a much longer period of time"); SX PFFCL ¶¶ 898-904, 956-62 (extrapolation from steering and ad-load experiments cannot provide information regarding long-term effects of the LSEs).

Response to ¶ 79. Dr. Reiley's attempt to extrapolate from other unrelated experiments is neither "conservative" nor defensible. SoundExchange incorporates SX PFFCL ¶¶ 958-62, which show that flaws in the LSE data consistently suggest that Dr. Reiley is underestimating the true effect of the loss of a [ ] catalog on Pandora.

iii. Six-Month LSE Results

Response to ¶¶ 80-81. No response.

Response to ¶ 82. SoundExchange disputes the characterization of the LSEs as resulting in "near-total suppression." It further disputes the claim that data in the LSEs—which were poorly designed, poorly implemented, and performed on only [ ]—can be used to draw valid conclusions about "any single record company." *See* Resp. to ¶ 64, *supra*; SX PFFCL ¶¶ 852-940.

Response to ¶ 83. SoundExchange incorporates SX PFFCL ¶¶ 956-62 (discussing Dr. Reiley's erroneous linear extrapolation). *See also* Ex. 5605 ¶¶ 70-71 (Tucker CWRT); Ex. 5607 ¶ 56 (Zauberman WRT) (extrapolation from partial to complete suppression is not behaviorally justifiable); 8/17/20 Tr. 2326:7-2331:15 (Tucker).

Response to ¶ 84. SoundExchange incorporates SX PFFCL ¶¶ 956-62 and its response to ¶ 83, *supra*. Dr. Reiley's attempt to extrapolate long-run effects of the LSEs by reference to other unrelated studies fails regardless of whether his starting point is 3 or 6 months of experimental

data. SoundExchange's experts testified that Dr. Reiley's written rebuttal testimony, which reports the six-month data, does not alter their views that the LSEs cannot estimate consumers' reactions over a five-year rate-setting period. 8/17/20 Tr. 2323:19-2325:9 (Tucker); 8/27/20 Tr. 4216:16-24 (Zauberman); *id.* at 4278:16-4280:6 (Simonson); SX PFFCL ¶ 899.

Response to ¶ 85. SoundExchange incorporates its response to ¶ 78, *supra*.

iv. Dr. Reiley's Label Suppression Experiments Suffer from Multiple Flaws that Make Them Unusable in the Economic Analysis

Response to ¶ 86. Pandora describes only a subset of SoundExchange's critiques of the LSEs and their application. As SoundExchange explains in SX PFFCL ¶¶ 852-940, the LSEs also failing to provide listeners with information consistent with consumers' experiences; actively impeding detection of the treatment; failing to achieve complete suppression (due to technical errors, miscellaneous provider tracks, upgrades to higher tiers of service, and availability of Premium Access sessions); limiting the sample size of the [REDACTED] treatment groups; and inexplicably excluding [REDACTED] from the experiments. Several additional errors arise from Professor Shapiro's application of ad hoc adjustments to the LSE data. *See* SX PFFCL ¶¶ 941-62.

As discussed in the above-referenced sections of SoundExchange's proposed findings, Dr. Reiley and Professor Shapiro's responses to these serious critiques are ineffective. Notably, the only support Pandora offers for the proposition that these witnesses' responses were successful in rebutting SoundExchange's criticisms is oral testimony from Dr. Reiley and Professor Shapiro themselves. Pandora cannot shore up its experimental design and implementation flaws by merely having the two people responsible for those flaws proclaim that they should be overlooked.

Pandora is right that "numerous SoundExchange witnesses" criticized Dr. Reiley's experiments. *See* Resp. to ¶ 64, *supra*. But Pandora's own expert, Dr. Hanssens, also provided data and testimony that undermine the LSEs. SX PFFCL ¶¶ 856, 931-40. Ultimately, the flawed LSEs

are the only outlier among the experiments and surveys submitted by all participants. Although Professors Zauberman, Hanssens, Simonson, and Hauser have their fair share of disagreements, all four of them show changes in consumer behavior and patterns of switching that are inconsistent with Dr. Reiley's claim that a degradation of content would cause no statistically significantly change. As Professor Zauberman explained, the LSEs essentially show "flat-lining," meaning that treated listeners appear not to be exhibiting any significant change in behavior. 8/27/20 Tr. 4217:5-21 (Zauberman) (explaining that "[p]eople are not responding to anything" in the LSEs "because of the serious flaws of that experiment").

1. LSE Results Do Not Match Important Real-World Conditions

Response to ¶ 87. SoundExchange incorporates SX PFFCL ¶¶ 857-75, which detail the irreparable mismatch between the LSEs and the question they are supposed to answer (i.e. how listeners would respond to label suppression in the real world). As described therein, Pandora did more than fail to inform listeners of the experiments; it also took steps to impede their ability to detect a change. *See* SX PFFCL ¶¶ 870-75.

Pandora's haphazard attempts to poke holes in the mass of evidence supporting SoundExchange's critique of the LSEs all fail. *First*, Pandora unduly dismisses SoundExchange's expert witnesses' testimony as speculative. *See* Pandora JFFCL ¶ 87. It is not. Professors Tucker, Zauberman, and Simonson provide examples from the real world and relevant academic literature, in addition to conceptual arguments. *See, e.g.*, Ex. 5605 ¶¶ 13-15, 17, 19-22, 24, 26, 42-44, 50-51, 54-57 & nn.16-21, 24, 26-28, 37-39, 40-43, 46-47, 75-81, 88, 92, 100-05 (Tucker CWDT); Ex. 5607 ¶¶ 26-29, 32-33, 50-51 & nn.16-27, 30-31, 63 (Zauberman WRT); Ex. 5608 ¶¶ 25-26, 31-34 & nn.11-12, 16-17, 19-20 (Simonson CWRT). Pandora also willfully ignores that the testimony of SoundExchange's witnesses is based on their knowledge and expertise. Professors Tucker, Willig, Zauberman, and Simonson (unlike Dr. Reiley) all testified as experts in their fields. Opining on

experimental design—a specialized topic on which they each write and teach—is precisely what these witnesses were called to do.

Second, Pandora is wrong that SoundExchange has not provided evidence that ad-supported listeners "would care if they learned a catalog was missing." *See* SXM PFFCL ¶¶ 88-90. In addition to the body of expert testimony cited above, SoundExchange has adduced survey data that shows listeners *would* care and respond if Pandora's ad-supported service were degraded. *See* Ex. 5608 App. F, Table 1B (Simonson CWRT) (62.4% of respondents in Modification and 63.7% of respondents in Replication chose "listen less" when asked what they would consider doing if ad-supported service was degraded). Internal Pandora documents also show that [ ]. SX PFFCL ¶ 878 (collecting documents); Ex. 5605 ¶ 25 n.44 (Tucker CWRT). Pandora musters a response to just one such document, and ignores the rest entirely. *See* SXM PFFCL ¶ 89 (citing to n.44 of Tucker's CWRT, but failing to respond to additional documents referenced therein).[1]

Third, Pandora's misconstrues testimony in which Professor Tucker and others provide examples of competitive responses to digital services' loss of content. In referencing widely publicized content blackouts on services like Netflix, Amazon, and Apple Music, Professor Tucker's point is that we know from the real world that competitive effects matter. *See* Ex. 5605

[1] The one document Pandora does address is the 2017 report regarding Pandora's Listener Churn Survey, Ex. 5153. *See* Ex. 5605 ¶ 25, n.44 & 45 (Tucker CWRT) (discussing this document). Even with respect to this document, Pandora's criticisms ring hollow. Pandora makes the unremarkable observations that the survey data was collected from "churned" (*i.e.*, former) Pandora listeners and that these listeners' responses varied depending on whether they were aided or unaided. But Pandora does not go the next step and explain *why* these observations call into question the rather obvious claim that music listeners care what music is available to them. Nor does Pandora gain any ground with its conclusory assertion that 10% of respondents is too small a number to be a serious concern. Notably, Pandora arrives at this number by ignoring respondents who expressed concern about repetition, and focusing only on the subset of respondents who criticized Pandora's catalog size. Finally, Pandora makes the incredible argument that survey respondents who expressed dissatisfaction with song availability must really have meant something else. Pandora does not explain why it now claims its own survey asked a question that respondents could not answer accurately. Nor can Pandora explain why this data was sufficiently reliable for the company to use in its internal business decision-making but *unreliable* when used by SoundExchange's expert.

¶¶ 18-27 (Tucker); 8/17/20 Tr. 2282:1-2283:3 (Tucker) (providing additional examples of field experiments, including her own, that show impact of competitive responses). Pandora's false suggestion that only on-demand services garner competitive responses ignores contrary evidence. For instance, Pandora fails to acknowledge Professor Simonson's discussion of the potential ESPN blackout on cable television (a noninteractive service), which was widely publicized by competitor services. Ex. 5608 ¶ 26 (Simonson); *see also* Ex. 5607 ¶¶ 25-29 (Zauberman WRT) (providing additional examples of public disclosure of real or threatened blackouts).

Pandora provides no reason to think that it—unlike these other media giants—would be able to keep a major loss of content secret. At a minimum, the blacked-out label and the artists it represents would certainly know about the change, have good reason to publicize it, and have incentives to encourage Pandora's competitors to do the same. Ex. 5605 ¶¶ 18-27 (Tucker CWRT); Ex. 5808 ¶ 26 (Simonson CWRT) (informing customers about loss of content "may be a way to increase leverage in ongoing or future negotiations"); *see also* Ex. 5607 ¶ 29 (Zauberman WRT) (it is "unfathomable" that Pandora could keep loss of a major label secret, in light of the "broad media coverage of comparable changes in online streaming content").

Fourth, Pandora does not seriously contend with the testimony regarding loss of option value. *See* SX PFFCL ¶ 877. As Professor Zauberman explains, "people care about keeping their options open, and are willing to pay a premium for a service that allows them to do that. In other words, even if users do not care about Pandora losing a specific artist, when choosing a music service, they would prefer to listen to a service that has the maximum content available." Ex. 5607 ¶ 33 (Zauberman WRT) (providing corroborating industry data); *see also* Ex. 5608 ¶¶ 31-40 (Simonson CWRT) (explaining behavioral heuristics that support this point).

Response to ¶¶ 88-89. SoundExchange incorporates Resp. to ¶ 87; SX PFFCL ¶¶ 857-75.

Response to ¶ 90. SoundExchange incorporates Resp. to ¶ 87 and SX PFFCL ¶¶ 857-75. The Judges should reject Pandora's absurd suggestion that SoundExchange's many examples of public disclosure of digital services' losses of content are only relevant if it can also quantify how many users or subscribers each exemplar service lost as a direct result. Putting aside that this type of evidence would require services that are not participants in this proceeding to voluntarily provide the parties with non-public competitive information about their customers, approximating this sort of causal connection would require that SoundExchange undertake the extraordinary task of conducting surveys, experiments or other research regarding each loss that each provider has experienced. Despite its attempt to impose impossible demands on SoundExchange, Pandora has of course produced no evidence supporting the counterintuitive assertion that negative publicity campaigns do *not* result in the relevant services losing users or subscribers.

Mr. Phillips' testimony does not provide any information about the degree to which consumers would react to a wholesale label blackout. Instances in which Pandora temporarily stopped playing a specific song or artist are not tantamount to losing the huge number of songs in a major record company's catalog. *See, e.g.*, SX PFFCL ¶ 6 ([redacted]). Nor are they equivalent to more permanent losses of content. *See* Ex. 5605 ¶ 77 (Tucker CWRT) ("Consumer learning can lead to substantial differences in the measures effect of treatment over time"); Ex. 5607 ¶ 32 (Zauberman WRT) ("not listening to Bruno Mars ([redacted]) for a month is not the same as knowing that Bruno Mars is no longer available on the Pandora service at all"). Even with regard to the limited instances Mr. Phillips addressed, he could testify only that he was not personally aware of negative reactions from Pandora's customers on an anecdotal basis; Pandora has adduced no actual measurement of changes in listening surrounding these occurrences. 8/31/20 Tr. 4663:24-4665:9 (Phillips).

Response to ¶ 91. SoundExchange incorporates Resp. to ¶ 87 and SX PFFCL ¶¶ 857-75. Blindly focusing only on Pandora's behavior does not seriously address the possibility of public disclosure. There is little doubt that *someone* would provide public information about a major change in available music, and that Pandora customers would have access to this information. SX PFFCL ¶¶ 860-62 (other possible sources of information include record companies, artists and artist managers, friends and family, news media, and social media platforms).

Moreover, there is reason to think that in the real world a service like Pandora [ ]. 8/17/20 Tr. 2304:3-9 (Tucker). [ ]. 8/17/20 Tr. 2303:18-21 (Tucker); Ex. 5385 at 1, 2, 5. [ ]. 8/17/20 Tr. 2304:13-19 (Tucker). [ ]. *Id.* at 2304:20-2305:5 (Tucker). [ ]. *Id.* at 2306:12-2307:2 (Tucker).

Response to ¶ 92. SoundExchange incorporates Resp. to ¶ 87, *supra* and SX PFFCL ¶¶ 857-75. As Professor Tucker explained, there is no basis for Dr. Reiley's purported concern about Hawthorne Effects. SX PFFCL ¶ 858; 8/17/20 Tr. 2281:10-25 (Tucker) ("Whether or not [a Hawthorne effect] is real is much disputed in the literature, but certainly any rationale you might have from a Hawthorne effect doesn't apply here" to the LSEs). There is also no basis for Dr.

Reiley's belief that the "actual consumption experience" would have a greater impact on listening hours than declarative knowledge gained from external sources. *Cf.* Ex. 5606 ¶ 32 (Zauberman WDT) (testifying, based on expertise in consumer psychology, that consumer behavior is informed by both experiential and declarative knowledge); Ex. 5608 ¶¶ 31-40 (Simonson CWRT) (discussing focalism and other behavioral concepts that may make declarative knowledge more salient); SX PFFCL ¶ 877 (discussing access to information and option value).

2. The Results of the LSEs Reflect Only Partial Suppression and Cannot be Extrapolated to Approximate a Full Blackout

Response to ¶ 93. SoundExchange incorporates SX PFFCL ¶¶ 880-96, 926. As discussed therein, even a slight deviation from perfect suppression would expose Pandora to substantial liability in the real world. SX PFFCL ¶ 926. Despite Pandora's attempt to minimize the [redacted] leakage rate in the [redacted] treatment group as small, this amount of leakage would expose a significant number of users in the treatment group to [redacted] tracks. SX PFFCL ¶ 896 (citing Ex. 5605 ¶¶ 70-71 (Tucker CWDT); 8/26/20 Tr. at 2326:7-2328:4 (Tucker)).

Oddly, Dr. Reiley only estimates the total leakage rate for [redacted] and not for any of the other treatment groups. *See* Ex. 4091 ¶ 34 (Reiley CWDT). But Pandora offers no reason to think that the leakage rate was consistent across treatment groups. Using the same method of calculation as Dr. Reiley did, and applying it to the [redacted] treatment group illustrates this point: Summing Dr. Reiley's estimates of the percentage of [redacted] spins served to the [redacted] treatment group [redacted] and dividing this number by the [redacted] spins served to the control group, approximated based on market share [redacted], shows that approximately [redacted] of the songs played to the [redacted] treatment group should have been suppressed ([redacted]). *See*

id. ¶¶ 30-33; Ex. 5600 ¶ 48, Fig. 7 & App. D, Ex. D-5 (Willig CWDT).[2] Pandora's failure to acknowledge this variation is particularly curious, given that [ ] is the treatment group Dr. Shapiro actually relied on in his testimony. *See* Ex. 4091 ¶ 34 (Reiley CWDT).

Response to ¶ 94. SoundExchange incorporates SX PFFCL ¶¶ 880-96, 926, and its Response to ¶ 93. Again, the [ ] suppression rate that Pandora cites refers to [ ], not to all treatment groups (as Pandora implies). *See* Resp. to ¶ 93, *supra*. In any event, Pandora's attempt to spin a [ ] leakage rate as "successful" is disingenuous. Professor Shapiro and Dr. Reiley's stated goal was to fully suppress the content of a given record company on the ad-supported tier (except interactive plays in Premium Access sessions), for users in the relevant treatment group:

> For the experiment run for a given record company, ***no music licensed by that record company will be played*** for listeners in that experimental group for that record company, except as requested under the Premium Access feature.

Ex. 4091, App. A (Reiley CWDT) (emphasis added); *id.* ¶ 16 (explaining intention to fully suppress radio-mode (*i.e.* non-interactive) plays in Premium Access feature as well). The LSEs did not achieve that stated goal. Ex. 4091 ¶¶ 27-34, App. A (Reiley CWDT); SX PFFCL ¶ 881 (collecting trial testimony). As described in SX PFFCL ¶ 926, this kind of deviation in the real world would expose Pandora to potentially catastrophic liability.

Response to ¶ 95. SoundExchange incorporates SX PFFCL ¶¶ 880-96, 926, and its Responses to ¶¶ 93-94, *supra*. Pandora again mischaracterizes the evidence and expert opinion of SoundExchange's witnesses. *See, e.g.*, Resp. to ¶¶ 77, 87. As Professor Tucker testified, [ ]. *See* 8/17/20 Tr. 2326:7-2328:4 (Tucker); Ex. 5605 ¶¶ 70-71, n.146 & 147 (Tucker CWRT).

[2] [ ] reflects the sum of [ ] suppressed-label spins detailed in paragraphs 31-33 of Dr. Reiley's written testimony: [ ]. Ex. 4091 ¶¶ 30-33 (Reiley CWDT). As Dr. Reiley shows in paragraph 34, the same calculation for [ ] sums to [ ], the number Dr. Reiley uses in his calculation of the [ ] suppression failure rate. *Id.* ¶ 34.

While Pandora asks the Judges to ignore Professor Tucker's substantial expertise and her citations to prominent articles by behavioral economics luminaries,[3] it does not hold itself close to the same standard. Pandora urges the Judges to instead credit Dr. Reiley's contrary opinion, based solely on his own experiments, even though Reiley is not an expert and even though he walked back this position at trial. *See* 9/1/20 Tr. 4955:4-21 (Reiley) (agreeing that perfect and imperfect suppression would have different effects on user behavior).

Pandora's claim that Professor Tucker's only support for her position is "an academic article about the price of chocolate," is particularly galling given that Professor Tucker explicitly corrected this same mischaracterization during her cross-examination. 8/18/20 Tr. 2425:2-2426:14 (Tucker) (noting that phenomenon "has actually been widely documented elsewhere").

3. The Flawed Design and Implementation of the LSEs Made It Difficult For Listeners to Detect Treatment

Response to ¶ 96. Pandora cites Professor Tucker's testimony for the proposition that "it is unlikely that light users would notice or care if Pandora lost access to a particular record label's catalog." In reality, Professor Tucker made precisely the opposite point. [

]. 8/18/20 Tr. 2409:3-2411:14 (Tucker); *see also* SX PFFCL ¶¶ 857-79. Professor Tucker testified that [

] 8/18/20 Tr. 2411:5-8 (Tucker).

[3] Authors of the articles Professor Tucker cites in footnotes 146 and 147 of her corrected written rebuttal testimony include Professor Dan Ariely (recently named one of the 50 most influential living psychologists in the world); Professor Nina Mazar (whose research was awarded the William F. O'Dell Prize for "the most significant, long-term contribution to marketing theory"); and, Nobel Laureates Daniel Kahneman and Amos Tversky.

Response to ¶ 97. SoundExchange incorporates SX PFFCL ¶ 907 and its Responses to ¶ 96, *supra*, ¶ 98, *infra*. Although Pandora cites to Professor Tucker's trial testimony for the proposition that it is possible to calculate the average impact across users, it strategically omits the testimony that immediately follows, in which she states that that approach is "very non-standard" and "will limit what you can measure." 8/18/20 Tr. 2424:2-2425:1 (Tucker).

Response to ¶ 98. The [ ] figure reported in Tucker's Rebuttal Appendix 1 is indeed "startling"—but not because of any misunderstanding or misattribution on Professor Tucker's part. Professor Tucker is forthright that this figure represents the [ ]. Ex. 5605 App. 1 (Tucker CWRT); *id.* ¶¶ 67-70. Even if one were to exclude "light" listeners as Pandora suggests and adjust the miscellaneous provider row pursuant to Dr. Reiley's dubious calculation, *see* SX PFFCL ¶ 895, the proportion of affected listeners would remain extremely high.

Response to ¶ 99. SoundExchange incorporates its Response to ¶ 98, *supra*. To the extent that Professor Tucker's understanding of the all_tracks metric was inaccurate, that inaccuracy stemmed from information provided by Dr. Reiley at his deposition. Professor Tucker's written testimony makes clear that Dr. Reiley's deposition testimony was the basis for her understanding of this term. Ex. 5605, App. 1 (Tucker CWRT) (describing Reiley's deposition testimony in response to questions about all_track and spins metrics).[4] To the extent that Dr. Reiley gave incorrect deposition testimony, his clarification at trial was long overdue and far too long after the submission of rebuttal testimony to allow for a correction. Perhaps cognizant that recalculating

[4] In the portions of Dr. Reiley's deposition testimony on with Professor Tucker relies, he was asked repeatedly about the all_tracks metric, the distinction between "tracks" and "spins" in Pandora's parlance, and why his data shows some listeners in the treatment group as listening to zero tracks—and gave responses that do not align with Pandora's current position. Pandora did not correct this aspect of Dr. Reiley testimony in their errata to his deposition transcript.

Professor Tucker's appendix to adjust for what they now claim is the right interpretation of all_tracks would not meaningfully reduce the total number of affected listeners, Pandora does not provide any information about what difference, if any, such a change would make.

Response to ¶ 100. SoundExchange incorporates its response to ¶ 98, *supra*. Although Pandora suggests that Professor Tucker should have only included listeners who heard a suppressed-label track while in radio mode on Premium Access, the distinction between radio-mode and other spins in Premium Access does not result in a difference in terms of the listeners' experience on suppression. In other words, it does not matter whether listeners were exposed to suppressed label tracks because of leakage that Dr. Reiley did not intend, or because of a poor design choice that intentionally played such tracks. Either would have impeded the listener's ability to detect the treatment. SX PFFCL ¶¶ 857-75.

B. The Hanssens Surveys

i. The Parameters of Professor Hanssens' Assignment

Response to ¶ 101. SoundExchange incorporates its response to ¶ 141 *infra*.

Response to ¶ 102. Sirius XM's claim that Sirius XM over the internet is "the only noninteractive subscription webcaster" is incorrect. Ex. 5625, App. A ¶¶ 32-33 (Bender WDT) (showing more than 60 noninteractive subscription webcasters). More importantly, there is no reason to believe that a survey of consumers who use Sirius XM over the internet is more probative than one of consumers who use Pandora Plus, particularly given that there is no evidence consumers attach value to the limited extra-statutory functionality that Pandora Plus provides, Ex. 5603 ¶¶ 103-04 & n.217 (Orszag WRT), and given that Professor Shapiro determined it was appropriate to use "financial data from Pandora Plus as a proxy for subscription webcasting," SXM PFFCL ¶ 152; *see also id.* ¶¶ 17-18.

Response to ¶ 103. This is an incorrect and disingenuous description of Professor Hanssens' assignment, which was to measure consumer reaction "if the music selection across all Free Internet Radio services were limited by the loss of access to any given record company's repertoire." Ex. 4095 ¶¶ 21-22 (Hanssens CWDT). At trial, Professor Hanssens affirmed that the hypothetical he provided was intended to ensure he could provide information about consumer reaction to that circumstance. 8/26/20 Tr. 4106:6-4107:17 (Hanssens); SX PFFCL ¶¶ 733-36.

ii. Professor Hanssens' Survey Questions

Response to ¶ 104. SoundExchange incorporates its response to ¶ 112, *infra*. As explained in that paragraph, trial testimony purporting to limit the scope of the Hanssens Surveys to a subset of respondents who would notice and be dissatisfied by label suppression is a meritless attempt to marry the contradictory results of the Hanssens Pandora Survey and Dr. Reiley's LSEs. The results of the Hanssens Pandora Survey reflect the aggregate reaction consumers would have if they were aware of a label blackout, whether or not any particular consumer experiences dissatisfaction, and regardless of how any particular user becomes aware of the blackout.

a) No response.

b) Including a category of response options "for completeness," even though it (admittedly) serves no purpose, runs counter to the principle of parsimony that survey experts on both sides espouse. 8/26/20 Tr. 4114:6-23 (Hanssens); 8/27/20 Tr. 4194:12-4195:5 (Zauberman). It also served to deflate the amount of substitution to music options. Ex. 5608 ¶ 67-74 (Simonson CWRT).

c) No response.

d) Professor Zauberman, like Professor Hanssens, asked respondents who selected more than one option in a previous question to allocate points up to 100. *See* SX PFFCL ¶¶ 727-30 (discussing Q3A); Ex. 5606, App. D (Zauberman WDT); 8/27/20 Tr. 4193:10-4197:1 (Zauberman); *see* SXM PFFCL ¶ 104(d) n.11. This approach is more reliable than asking

respondents to estimate *absolute* time. *See* 8/27/20 Tr. 4191:6-4192:6, 4195:23-25, 4196:19-20 (Zauberman); *see also* Ex. 5606 ¶¶ 60-62 (Zauberman WDT); Ex. 5607 ¶ 61 n.76 (Zauberman WRT); 8/27/20 Tr. 4288:19-4289:12 (Simonson). Asking respondents to estimate percent reductions in time is essentially a point allocation approach, in that it seeks information based on relative quantifications, and is therefore reliable. *See* SX PFFCL ¶ 754.

Response to ¶¶ 105-06. No response.

iii. Professors Simonson's and Zauberman's Views Generally Align with Professor Hanssens', Despite Several Points of Disagreement

Response to ¶ 107. Although their approaches generally align with Professor Hanssens', Professors Simonson and Zauberman identified points of disagreement with the Hanssens methodology, which render the results of Professor Hanssens' surveys informative but conservative. *See* Ex. 5608 ¶¶ 62-84 (Simonson WRT); Ex. 5607 ¶¶ 15-19 (Zauberman WRT).

Response to ¶ 108. No response.

Response to ¶ 109. The sample size of Professor Hanssens' Sirius XM Survey was very small, making the results of that survey imprecise. Ex. 4095 ¶ 64 (Hanssens CWDT) (reporting sample size of only 150 respondents); *see* Ex. 5607 ¶ 19 (Zauberman WRT) (because Sirius XM Survey has confidence intervals as wide as 16%, results "should be interpreted with caution").

Response to ¶ 110. No response.

iv. Professor Simonson's Replication of Professor Hanssens' Survey Demonstrates Its Reliability

Response to ¶ 111. No response.

v. The Judges Should Reject Pandora's Disingenuous Attempt to Call Its Own Witness's Findings into Question and Ignore the Conflict Between the Hanssens Pandora Survey and the LSEs

Response to ¶ 112. This paragraph of Pandora's findings of fact muddles together three substantive issues—all of which it gets wrong. *First,* Pandora jumps from the factual statement

that the Hanssens Pandora Survey does not measure respondents' amount of lost listening to the false suggestion that such a measurement is not possible. The record does not support that conclusion. *See* SXM PFFCL ¶ 112 (citing Professor Shapiro, and no survey expert, for this incorrect proposition). Indeed, Professor Simonson did precisely what Pandora claims can't be done: In his Modified Hanssens Survey, he added a single question, which allowed him to collect data on both diversion and the change in listening. SoundExchange incorporates SX PFFCL ¶¶ 752-754, 935-937 (describing Simonson survey) and its response to ¶¶ 120-23 *infra*.

Next, Pandora incorrectly claims that the Hanssens Survey oversamples, reasoning that the loss of a record label might not equate with the loss of "some of your favorite artists" for all respondents. This argument ignores the structure of the industry. Each major record company controls a significant market share and a vast, diverse number of labels encompassing thousands of hit recordings from nearly every genre and era. Ex. 5613 ¶¶ 6-7 (Piibe WDT); Ex. 5611 ¶ 3 (Adadevoh WDT); Ex. 5609 ¶ 5 (Harrison WDT).

At trial, Judge Strickler probed this issue, noting that Pandora listeners have varied tastes and may respond differently to the loss of certain content. 8/10/20 Tr. 989:24-991:3 (Willig). As SoundExchange explains in SX PFFCL ¶¶ 877-88, 941-44, there are a number of reasons that even listeners who do not enjoy, say, Top 40 hits would still experience the loss of a major label as a degradation, not a gain.

Customization: Pandora's algorithm is designed to serve each listener music that is tailored to his or her tastes. To the extent that a particular listener dislikes certain genres or artists, such music should not be played (either because the seeded station does not include that genre of music or because the listener can "thumbs down" any song he or she does not want to hear again). These same customization features also explain why Professor Hanssens' hypothetical works. The

hypothetical posits that the service loses "some of your favorite artists and some newly released music." *See* Ex. 4095 ¶ 39 (Hanssens CWDT). Regardless of whether an individual values new releases, customized channels by definition include "some of their favorite artists."

Option Value: Focusing solely on individual taste in music does not capture the value that listeners place on having access to a wide variety of music. Industry data and well-established behavioral principles suggesting that option value matters to consumers support this conclusion. SX PFFCL ¶¶ 877-78. In other words, consumers would experience the loss of a major catalog as a degradation, regardless of whether they knew or cared about which songs or artists were lost.

Shared Plans: Relatedly, Pandora listeners who share their accounts with friends or family members (for instance, because they use Pandora in the family car) may be less motivated by their own musical tastes. For these consumers, the breadth of Pandora's catalog relative to other services' may be especially important. Pandora's narrow focus on the extent to which consumers associate particular artists with a given record company ignores these significant points.

Pandora's focus on whether consumers are able to accurately pinpoint the content of any record company's catalog is also contradicted by Professor Hanssens, who explicitly designed his hypothetical scenario to avoid this issue. *See* Ex. 4095 ¶ 33 (Hanssens CWDT). As he testified:

> Because I was concerned that listeners of Free Internet Radio services would not know what music is associated with a particular record company, and in order to present this concept in a way music listeners could easily understand, I framed the hypothetical in the Pandora Survey as what would happen if music listeners noticed that all of the Free Internet Radio services stopped playing music by some of your favorite artists and some newly released music.

Id. Although he was well-aware of this issue in designing his survey, Professor Hanssens' written testimony does not present his results as unreliable. *See generally* Ex. 4095 (Hanssens CWDT) (describing question of interest as measuring effects of "loss of access to any given record company's repertoire" and formulating hypothetical to address that issue). Only when his own

counsel pressed him to adopt this theory at trial, did he agree that oversampling, and therefore overstating diversion, was a possibility. For reasons described above, and because there are a number of ways in which Professor Hanssens survey likely *understates* diversion, there is no reason to believe that that "oversampling" presents an issue. *See* SX PFFCL ¶¶ 758-60 (discussing ways in which the Hanssens surveys are understated).

Finally, the Judges should reject Pandora's attempt to avoid acknowledging the conflict between the Hanssens Pandora Survey and the LSEs. Professor Hanssens' survey found that a significant number of users (61.8%) would reduce listening to Pandora in the event of label blackout and also found that a significant number of consumers would replace that listening time with, among other things, new subscriptions to interactive services (21.3%), new subscriptions to noninteractive services (26.6%), and use of a free on-demand service (45.6%). SX PFFCL ¶¶ 741-44. [[redacted]]. This conflict reinforces the fact that the LSEs are too flawed to provide any scientifically valid information related to the question of interest. SX PFFCL ¶¶ 931-40.

Pandora asked Professor Hanssens to design a survey that—like the LSEs—assessed what effect suppressing a label's content would have on the behavior of ad-supported listeners. Professor Hanssens defined the key question of interest as: "Whether **listeners of Free Internet Radio** would change their listening to Free Internet Radio if the music selection across all Free Internet Radio Services were limited by the loss of access to any given record company's repertoire." Ex. 4095 ¶ 13 (Hanssens CWDT); *accord* SX PFFCL ¶¶ 733-36. Incredibly, Pandora now asks the Judges to believe that the Pandora Survey was *not* intended to apply to all "listeners of Free Internet Radio" but instead to a narrow subset of that group: those who would notice and be dissatisfied by the degradation of Pandora Free. But Professor Hanssens' work was never so

limited, and—as Professor Hanssens testified—the scope of his assignment has at all times remained the same. 8/26/20 Tr. 4106:1-4107:17 (Hanssens) (agreeing that assignment has not changed since he submitted his written testimony, and that hypothetical was designed to measure the behavior of "U.S.-based listeners of free Internet radio services" in the event of a service's "loss of access to any given record company's catalog"); *see also* SX PFFCL ¶¶ 931-40; 8/10/20 Tr. 988:18-989:22 (Willig). Professor Hanssens' trial testimony reaffirmed that his survey design was *not* dependent on the method by which respondents learned about the services' degradation, and that if respondents gained information through a third-party (rather than noticing a change through their own experiences) that would not materially change his results. 8/26/20 Tr. 4129:9-4130:6, 4132:2-23, 4134:13-24 (Hanssens).

vi. Professor Simonson's Modified Pandora Survey Supports SoundExchange's Interpretation of Professor Hanssens' Findings

1. Pandora's Meritless Broadsides of Professor Simonson Misrepresent the Hanssens Surveys

Response to ¶ 113. Pandora's attempt to diminish Professor Simonson's critiques as "abstract academic theories" is unfounded. As Pandora's own witness testified, "replication means trying to see whether [the] results hold in different settings and different times and different places." 9/1/20 Tr. 4981:23-25 (Reiley). It does not follow that a replicable survey is necessarily devoid of any biases or other issues that would make its results differ from real-world effects.

Response to ¶ 114. Neither Professor Hanssens nor any other witness contest the accuracy of the well-established body of research regarding diversification bias.[5] While Professor Simonson did not quantify the upward adjustment needed to offset the effect of that bias, and while

[5] Professor Simonson is the only survey expert in this proceeding who provides *any* empirical basis for assessing potential flaws in another expert's survey. Specifically, he tested the effect of Professor Hanssens' instruction that respondents should assume they noticed and were dissatisfied with the degradation of their ad-supported Pandora service, and found that the language had virtually no effect. SX PFFCL ¶¶ 745-51; Ex. 5608 ¶ 99 (Simonson WRT). Professor Hanssens affirmed that conclusion. 8/26/20 Tr. 4104:22-25 (Hanssens).

SoundExchange does not seek an upward adjustment to offset the effect of that bias, the key point is this: Professor Hanssens' survey if anything *understates* the degree to which consumers would divert to other forms of music listening in the event of label blackout. *See* 8/27/20 Tr. 4322:24-4324:4 (Simonson) (testifying that he teaches and has conducted studies on diversification bias); *cf.* Resp. to ¶ 112 (addressing post-hoc and unquantified oversampling argument).

Response to ¶ 115. SoundExchange incorporates its response to ¶¶ 104(b), 113-14, *supra*.

Response to ¶ 116. Professor Hanssens and Sirius XM do not contest Professor Simonson's critique: that a consider-then-choose framework is inappropriate where, as here, the consumer decision involves low and no-cost options, and is easily reversed. Ex. 5608 ¶¶ 75-81 (Simonson WRT). Pandora's assertion that P40 was customized so that it did not *always* provide users with 16 options belies the point. Needlessly asking respondents to form a consideration set before giving them anywhere between 13 and 18 switching options deflates the amount of switching to non-music options. *See* Ex. 4095 ¶ 46 (Hanssens CWDT); *id.* App. 7 at 122. And the screenshots appended to Professor Hanssens' testimony illustrate the numerousness and complexity of the response options provided in question P40. Ex. 4095, App. 7, at p. 122 (Hanssens CWDT) (showing 16 response options); *see also id.* at App. 6, at p. 101. Although Professor Simonson did not quantify the upward adjustment needed to offset the effect of that bias, and although SoundExchange does not seek an upward adjustment to offset the effect of that bias, Professor Simonson's point again illustrates that the Hanssens Survey *understates* the degree to which consumers would divert to other forms of music listening in the event of label blackout.

Response to ¶ 117. Pandora does not contest that the Hanssens Pandora Survey fails to capture the effects that a label blackout would have on Pandora's ability to attract new customers. *See* SX PFFCL ¶¶ 788-89 (explaining that, for this reason, Hanssens, Simonson and Zauberman

survey data all understate effects). Pandora's response that this was outside the scope of Professor Hanssens' assignment is nonresponsive to that critique.

2. Professor Simonson Shows That Professor Hanssens' Results Are Not Limited to Dissatisfied Listeners

Response to ¶ 118. No response.

Response to ¶ 119. In effect, Sirius XM acknowledges there is no need to instruct respondents (as Professor Hanssens did) to imagine they are dissatisfied by label blackout, because dissatisfaction follows naturally from the loss of content. However, Sirius XM draws the wrong conclusion from this consensus. The fact that dissatisfaction is "implicit" in the loss of content only underscores that the LSEs fail to provide information about what would happen if Pandora actually lost access to a major record company's catalogue. As Professor Hanssens acknowledged at trial, consumers can find out about the loss of content from a variety of external sources, and the Hanssens Surveys approximate the effect of learning or finding out about the loss of content this way. 8/26/20 Tr. 4129:9-4130:6, 4132:2-23, 4134:13-24 (Hanssens); *see also* Resp. to ¶ 112 supra (rebutting argument that Hanssens results are overstated); SX PFFCL ¶¶ 852-940 (addressing LSEs).

3. Professor Simonson's Question 225 Is Reliable and Well-Constructed

Response to ¶ 120. No response.

Response to ¶ 121. SoundExchange incorporates its response to ¶¶ 112, and 122-23.

Response to ¶ 122. None of these critiques have merit. *First*, the claim that loss of a label "fundamentally differs from loss of favored artists or newly released music" is unsupported by the evidence and contrary to Professor Hanssens' own testimony regarding his choice of hypothetical. Resp. to ¶ 112 *supra*. *Second*, Professor Simonson's modification illustrates that the survey is not limited to a subset of users, but rather speaks to aggregate consumer reaction in the event

consumers are aware of label blackout, as they would be in any real world circumstance. Resp. to ¶¶ 112, 119 *supra*. *Third*, Pandora seems to suggest Professor Simonson should first have asked listeners to report their current listening time. But, as both Professors Hanssens and Zauberman testified, questions regarding absolute time are notoriously difficult for respondents to answer. To the extent that Pandora's argument is that respondents' thinking must be anchored in their current listening, that does not require asking them to respond to a question about current listening in writing. *See, e.g.*, Ex. 5606, App. D (Zauberman WDT) (Q3/3A).

Response to ¶ 123. Professor Simonson drew on extensive research in constructing Q225. 8/27/20 Tr. 4288:19-4289:24 (Simonson). In order to ensure this question provided the most reliable data possible, Professor Simonson intentionally provided relatively wide ranges; doing so allowed respondents to make relative assessments. This feature allowed Professor Simonson to avoid asking respondents to provide absolute numbers (e.g. "I would listen 43% less")—a practice that he, Professor Hanssens, and Professor Zauberman all agreed would have been inferior. *See* Resp. to ¶ 104 *supra*. The only support Pandora musters for its critique is a single sentence of testimony by Professor Hanssens in which he does not claim that Professor Simonson's Q225 is biased, stops short of saying it is unreliable, and references no research in support of his opinion. *Compare* 8/26/20 Tr. 4096:20-23 (Hanssens), *with* SXM PFFCL ¶ 123. Professor Hanssens' cited testimony also provides no basis for Pandora's claim that Professor Willig's analysis is unsupported by empirical evidence. *See* SXM PFFCL ¶ 123 (citing no additional authority for this proposition). Professor Simonson's decision to use ranges that were not perfectly balanced was guided by his understanding of consumer psychology and his desire to give respondents the option of choosing a relatively minimal reduction in listening. 8/27/20 Tr. 4290:23-4293:19 (Simonson). Professor Simonson testified that there is no reason to think that these minor asymmetries would

bias the responses. 8/27/20 Tr. 4293:10-11. Even if they did, the bias would work *against* SoundExchange because the brackets are slightly clustered at the low end (meaning, if respondents were nudged at all it would be toward less reduction in listening).

Finally, Professor Simonson's decision to ask a relatively simple question is consistent with his attempt to make only minimal changes to the Hanssens Pandora Survey while providing information that that survey failed to collect. *See* Resp. to ¶ 104(d) *supra*; SX PFFCL ¶ 758.

IV. THE RATES PROPOSED BY PANDORA AND SIRIUS XM SHOULD BE REJECTED

Response to ¶ 124. SoundExchange incorporates its responses to JPFFCL ¶¶ 1-18.

Response to ¶ 125. No response.

A. Professor Shapiro's Bargaining Model Is Deeply Flawed and Highly Sensitive to a Number of Unsupported Assumptions and Flawed Inputs

Response to ¶ 126. SoundExchange does not dispute that Professor Shapiro attempted to compute record company opportunity cost and distributor willingness to pay, and deploy a variant of "split-the-difference" bargaining to determine a royalty rate between the two. However, Professor Shapiro's choice of model is inadequate to the task at hand, and his calculations of the empirical inputs are plagued with errors. *See* SX PFFCL ¶¶ 843-1061.

In addition, SoundExchange observes that the Services are incorrect as a matter of economics to state that a webcaster's willingness to pay "sets the 'ceiling' for the royalty rate." As Professor Willig explained at trial, in the circumstance where a webcasters' willingness to pay is *below* record company opportunity cost, the statutory rate should be set at record company opportunity cost. Ex. 5601 ¶ 80 (Willig WRT); 8/5/20 Tr. 330:8-331:16, 332:15-333:6 (Willig). Thus, while opportunity cost sets an absolute floor for the statutory rate, willingness to pay does *not* set an absolute ceiling. *See* SX PFFCL ¶ 564.

i. Professor Shapiro Fails to Correctly Compute Record Company Opportunity Cost

Response to ¶ 127. Professor Shapiro's computation of record company opportunity cost is incorrect. *See* SX PFFCL ¶¶ 843-995.

Response to ¶ 128. No response.

Response to ¶¶ 129-30. SoundExchange incorporates its response to ¶ 127 *supra*.

Response to ¶ 131. SoundExchange incorporates its response to ¶ 127 *supra*. SoundExchange further notes that Professor Shapiro's approach incorporates two assumptions that the Services inconsistently criticize Professor Willig for making. First, Professor Shapiro did not adjust the royalty rates obtained from outside forms of distribution and instead accepted those rates as they are in reality. *But see* JPFFCL ¶ 184 (criticizing Professor Willig's "glib 'fork in the road analogy'"). Second, Professor Shapiro did not account for the diversion of listening to non-music activities. *But see* JPFFCL ¶ 188 (incorrectly criticizing Professor Willig for adopting this assumption, which he did not).

Response to ¶ 132. Professor Shapiro's approach to retention is appropriate for record companies that are "must have" to noninteractive services. 8/5/20 Tr. 346:12-15 (Willig); 8/6/20 Tr. 612:3-15 (Willig). [redacted]. 8/6/20 Tr. 612:3-15 (Willig).

However, this "'natural' performance share" approach is inappropriate when the loss of a record company would *not* shut down a service. SXM PFFCL ¶ 132. Professor Shapiro himself acknowledged that, "in the case where an indie, a particular artist, for example, . . . was not there and the user noticed that as part of their service, then there would be cases where the user would go and seek out that artist's music, particularly if they were a hard-core fan of the artist, for

example." 8/20/20 Tr. 3201:20-3202:19 (Shapiro); *see also* 8/6/20 Tr. 614:4-11, 615:24-616:12, 816:12-17, 822:5-15 (Willig). Professor Shapiro's approach does not account for this likelihood and, at trial, he inexplicably refused to make even modest accommodations in this direction. 8/19/20 Tr. 2790:23-2791:4, 2793:1-7 (Shapiro).

To understand how unrealistic Professor Shapiro's retention assumption really is, consider an example. Suppose that Pandora has 1,000,000 plays a month and 1,000 of those plays are of the independent record company Handzo Music. Now suppose that Handzo Music has the rights to only one artist, The States, so all 1,000 plays are of that band. Because Handzo Music is an independent label, Professor Shapiro would expect it to have a power ratio of 1.0, meaning that a blackout of Handzo Music would lead to a loss of 1,000 plays. Ex. 4094 at 76 (Shapiro Second CWDT). Suppose, conservatively, that only half of these plays would resurface on other platforms, because the remainder would divert to non-music alternatives. *See* Ex. 5606 ¶¶ 24, 57, 72 at Fig. 8, 74 at Fig. 9 (Zauberman WDT). The question is, how many of these 500 diverted plays will be of The States? According to Professor Shapiro, Handzo Music's retention ratio will equal its "'natural' performance share," meaning 0.1% (= 1,000 / 1,000,000). SXM PFFCL ¶ 132. This means that, of the 500 diverted plays, 0.5 plays would be of The States (= 0.1% x 500).

In other words, under Professor Shapiro's approach, over the course of an entire month, The States would not receive even *a single* diverted play resulting from the blackout of Handzo Music on Pandora. There is simply no room in this model for a fan of this band to notice she isn't hearing them anymore—including when she seeds a radio station with "The States"— and to seek out their recordings somewhere else. This is unrealistic.

Professor Willig's retention approach to independent record companies is more defensible, given that users can and do seek out missing content on platforms such as YouTube. Ex. 5169 at

3, 6. [redacted]. 8/6/20 Tr. 619:4-20, 811:4-19, 815:20-816:7, 822:2-4 (Willig); Ex. 5601 ¶¶ 84-90 (Willig WRT).

Response to ¶ 133. Professor Shapiro's conversion of total opportunity cost to per-performance opportunity cost is incorrect. *See* SX PFFCL ¶¶ 974-77.

1. Professor Shapiro's Estimates of Lost Listenership from a Label Blackout Are Rooted in the Profoundly Unreliable LSEs

Response to ¶ 134. SoundExchange has explained at length why Professor Willig's "must have" specification for major record companies is not only defensible, it is amply supported by the surveys in this proceeding, documentary evidence, admissions from the Services' experts, and past statements by the Judges. *See* SX PFFCL ¶¶ 583-609; SX Reply to JPFFCL ¶¶ 185, 191-206. Here, SoundExchange adds only the following point: The Services' claim that the must have specification "is equivalent to a loss rate of 100%" elides an important issue. SXM PFFCL ¶ 134. Professor Willig explained at trial that [redacted]). 8/5/20 Tr. 475:2-16 (Willig). That threshold could easily by crossed by a [redacted] reduction in plays—which the Modified Hanssens Survey proves would be the result of a service degradation. 8/5/20 Tr. 475:19-24 (Willig); Ex. 5601 ¶ 34 (Willig WRT). This, in turn, would cause the service to shut down, resulting in "a loss rate of 100%." SXM PFFCL ¶ 134.

Response to ¶ 135. The LSEs are the *only* evidence Professor Shapiro cites as support for his loss rate specification. Those experiments are neither "robust, "very valuable," nor "directly relevant," for the reasons discussed elsewhere. SX PFFCL ¶¶ 852-963; *supra* Resp. to ¶¶ 64-100.

Response to ¶ 136. Professor Shapiro's adjustments to the three-month LSE results were entirely ad hoc and inappropriate. SX PFFCL ¶¶ 952-54. First, lacking an LSE result for [redacted]

and a non-absurd LSE result for [ ], Professor Shapiro applied the result of the [ ] LSE to [ ], adjusting for the record companies' difference in relative play shares. Ex. 5601 ¶ 19 (Willig WRT); Ex. 4094 at 19 (Table 1), 20, 22-23, 25-26 (Shapiro Second CWDT). But because none of the LSEs produces results that are [ ], Ex. 4091 ¶ 21 (Reiley CWDT), Professor Shapiro's approach amounts to drawing on the random "noise" from one LSE treatment group and asserting that such noise constitutes a better estimate of blackout effects than the random noise from his other treatment groups. Ex. 5601 ¶ 28 (Willig WRT). This attempt to use one label's results to "bootstrap" onto another label, 9/1/20 Tr. 4975:5-11 (Reiley), is inappropriate and cannot form the basis for reliable results. Ex. 5601 ¶¶ 28-29 (Willig WRT). [ ]. *See* 8/6/20 Tr. 610:4-611:8 (Willig); SX PFFCL ¶¶ 952-54.

Response to ¶ 137. Second, Professor Shapiro converted the short-term LSE results into purported long-term label suppression impacts by multiplying by an adjustment factor of three. Ex. 4094 at 19, 22-23, Tbl. 3 (Shapiro 2nd CWDT). Professor Shapiro "provides no legitimate support for why this relationship, which was obtained from a different experiment involving a different treatment and a different experimental design, is applicable here." Ex. 5605 ¶ 93 (Tucker CWRT); *see* 8/5/20 Tr. 583:2-584:13 (Willig). Professor Willig testified that [ ] *Id.* 583:3-6 (Willig); SX PFFCL ¶¶ 956-62 (discussing this issue in detail).

Response to ¶ 138. Third, Professor Shapiro reported per-play opportunity cost estimates using the upper end of the 95% confidence interval from the LSEs. Ex. 5601 ¶ 21 (Willig WRT).

Professor Shapiro proffered these upper-end results as a solution to the problem that the LSEs failed to inform affected Pandora Free listeners (and everyone else) of the experiments. Ex. 5601 ¶ 21 (Willig WRT); Ex. 4094 at 19 (Shapiro Second CWDT). But [ ] 8/5/20 Tr. 581:11-25 (Willig). As such, [ ] *Id.*; *see also* 8/17/20 Tr. 2335:6-21 (Tucker); Ex. 5605 ¶ 92 (Tucker CWRT). The Services have failed to offer any logical, mathematical, or statistical justification for Professor Shapiro's adjustment. SX PFFCL ¶ 955; *see also* 8/19/20 Tr. 2704:8-2705:11 (Shapiro).

Response to ¶ 139. Professor Shapiro's arbitrary adjustments do not correct the LSEs' many flaws, which consistently suggest that the LSEs underestimate the true effect of the loss of [ ] on Pandora. The estimated loss rates computed by Professor Shapiro based on the LSEs are therefore unreliable and do not reflect the true effect of a blackout. Ex. 5605 ¶ 103 (Tucker CWRT); Ex. 5601 ¶ 28 (Willig WRT).

Response to ¶ 140. Professor Shapiro has at no point offered a bona fide "alternative to using estimates derived from the LSEs." SXM PFFCL ¶ 140. The closest he came was in Figure 14 of his written rebuttal testimony. Ex. 4107 at 66, Fig. 14 (Shapiro WRT). But this figure presents royalty rate estimates that accept Professor Shapiro's flawed opportunity cost inputs and flawed willingness to pay inputs. *Id.* nn. [1], [2]. Given the seriousness of those errors, SX PFFCL ¶¶ 983-1018, this does not constitute a reliable sensitivity test. Professor Willig did present a sensitivity test that both set the power ratio for all labels at 100% and fixed Professor Shapiro's input errors. SX PFFCL ¶ 707; Ex. 5601 ¶ 89 (Willig WRT); 8/10/20 Tr. 1041:9-15 (Willig). Using Professor Shapiro's preferred bargaining model (Nash-in-Nash) and setting a retention rate halfway between

the ones utilized in each economist's baseline models, Professor Willig determined per-play royalty rates of [ ] for both ad-supported and subscription. Ex. 5601 ¶ 90 (Willig WRT). Those rates are much closer to Professor Willig's baseline rates than to Professor Shapiro's.

2. Professor Shapiro Incorrectly Estimated the Average Royalty for Diverted Performances by Ignoring Probative Evidence from the Hanssens Survey

Response to ¶ 141. Sirius XM's description of Professor Shapiro's approach elides a critical issue. According to Sirius XM, computing "the average royalty payment that the record company would receive from diverted performances (*R*) in the event of a blackout" requires understanding "how much a record company would earn in royalties *from performances* on each alternative source of listening." SXM PFFCL ¶ 141 (emphasis added). This is accurate with respect to outside sources of distribution that do, in fact, pay royalties on a per-performance basis, such as ad-supported interactive services. [ ]. *See* 8/20/20 Tr. 3128:19-3129:6, 3156:8-18, 3242:24-3243:3 (Shapiro); *see* 8/26/20 Tr. 3945:5-18 (Shapiro). As Professor Willig explained, the latter royalties do not vary depending on the number of performances made by any given subscriber. Ex. 5601 ¶ 48 (Willig WRT). A $9.99 a month subscription to Spotify Premium generates the same amount of royalties for record companies, whether the subscriber uses that service to stream 10 recordings or 1,000 recordings in a month. *Id.*; 8/5/20 Tr. 499:14-21 (Willig). [ ]. 8/6/20 Tr. 635:20-23 (Willig); *see also* 8/20/20 Tr. 3128:13-25 (Shapiro).

Response to ¶ 142. While Professor Shapiro purported to rely on the Hanssens surveys to generate his diversion ratios, in reality he selectively ignored key data from those surveys, thereby suppressing his opportunity cost computations. *See* SX PFFCL ¶¶ 967-79.

Response to ¶ 143. Professor Shapiro's computation of the royalties record companies would earn from alternative sources of listening is incorrect, in large part due to his failure to correctly calculate royalties generated on a per-subscriber basis. *See id.* ¶¶ 964-82.

Response to ¶ 144. Professor Willig and Professor Shapiro agree that listening time shifted to existing on-demand subscriptions does not generate additional royalties for the record companies. Ex. 4094, App. D at 2-3 (Shapiro Second CWDT); Ex. 5601 ¶ 50 (Willig WRT); *see* 8/6/20 Tr. 635:11-19 (Willig). But only Professor Willig recognized the obvious implications of this approach. *See* SX PFFCL ¶ 978. Additional plays on existing on-demand subscriptions do not generate more royalties because royalties are paid on a per-subscriber basis, not a per-play basis. Ex. 5601 ¶¶ 47 n.92, 49 n.96, 50 (Willig WRT).

Sirius XM fails to detail the steps involved in Professor Shapiro's circuitous approach, thereby obscuring its unreasonableness. Professor Shapiro started with the undisputed per-subscriber royalty of [ ] per month, and then divided this by an artificial and empirically ungrounded estimate of [ ], 8/20/20 Tr. 3142:1-14 (Shapiro), to get an estimate of [ ]—which Professor Shapiro then multiplied by the percentage of plays lost by Pandora (from the LSEs) and then by the percentage of those lost plays that would divert to new on-demand subscriptions. Ex. 4094 at 17-18 (Shapiro Second CWDT).

Professor Shapiro ignored a far more straightforward and reasonable path: multiply the per-subscriber royalty of [ ] by the number of new on-demand subscriptions. *See* Ex. 5601 ¶ 48 (Willig WRT); 8/6/20 Tr. 640:22-12, 643:11-19 (Willig). The Hanssens Survey specifies this latter number and permits an easy calculation that accords with how these royalties are paid out in the real world. 8/20/20 Tr. 3135:12-3136:10, 3155:20-3156:18, 3242:18-23 (Shapiro); 8/26/20 Tr. 3945:5-12 (Shapiro); *see also* SX PFFCL ¶¶ 964-79.

Response to ¶ 145. Professor Shapiro's actual computation of royalties associated with CDs, vinyl, and MP3s is incorrect for the reasons detailed in SoundExchange's proposed findings. SX PFFCL ¶¶ 634-39. First, Professor Shapiro erroneously assumes that there are *no* individuals who purchase multiple forms of these media (*e.g.*, someone who buys both MP3s and vinyl). Second, Professor Shapiro presents no basis for assuming that consumers purchase these media in accordance with their listening habits, such that associated royalties scale with listening time. *See* Ex. 4107, App. D at 86 (Shapiro WRT). Put differently, Professor Shapiro presents no reason to think that consumers who would divert their listening from Pandora to newly-purchased CDs, vinyl, and MP3s would do so at rates any different than the average purchaser of these media. These two errors artificially reduce the royalties Professor Shapiro computes from this category. *See* SX PFFCL ¶¶ 636, 638; Ex. 5039 at 16; 8/5/20 Tr. 504:16-20, 505:5-6, 515:14-19 (Willig).

Response to ¶ 146. The table in this paragraph of Sirius XM's findings is unreliable because it contains numerous errors in the computation of the royalties that record companies earn from sources of distribution besides noninteractive streaming services. *See* SX PFFCL ¶¶ 964-82; *see* Ex. 5600 ¶ 42, Fig. 4 (Willig CWDT). Chief among these is Professor Shapiro's opportunity cost error related to per-subscriber services, discussed above. *See id.*; *supra* Resp. to ¶¶ 141, 144.

Response to ¶ 147. SoundExchange incorporates its response to ¶ 146 *supra*.

3. Multiplying One Flawed Input by Another Produces Incorrect Estimates of Record Company Opportunity Cost

Response to ¶ 148. The table in this paragraph of Sirius XM's findings is unreliable because it is premised on the flawed LSEs (for the calculation of "L") and numerous errors in the computation of the royalties earns from outside sources of distribution (for the calculation of "R"). *See* SX PFFCL ¶¶ 964-82; *see* Ex. 5600 ¶ 42, Fig. 4 (Willig CWDT). Multiplying two defective variables does not generate reliable results.

Furthermore, SoundExchange observes that even if *just* Professor Shapiro's error in the computation of per-subscriber royalties is corrected, the results in this table change dramatically. For example, the per-play opportunity cost for [[redacted]] increases to [[redacted]] per play, which is almost [[redacted]] times the opportunity cost reflected in the table. The results are even more dramatic when comparing the corrected number to the "point estimate" calculations in Professor Shapiro's written testimony (which are conspicuously omitted in this paragraph of Sirius XM's findings). *See* Ex. 5601 ¶ 55, Fig. 13 (Willig WRT); Ex. 4094 at 25, Table 3 (Shapiro Second CWDT) (reflecting [[redacted]] "point estimate" for Sony).

Response to ¶ 149. Professor Shapiro calculated lower opportunity costs for independent labels due to his unsupported retention specification for these labels. *See supra* Resp. to ¶ 178.

ii. Professor Shapiro Artificially Depressed Webcasters' Willingness to Pay, Leading to Deflated Royalty Rates

Response to ¶ 150. SoundExchange incorporates its response to ¶ 126 *supra*.

Response to ¶ 151. SoundExchange agrees that "[c]alculating the webcaster's marginal profit on incremental plays requires an understanding of . . . the incremental costs (or 'variable costs') *associated with those added hours of listening*." SXM PFFCL ¶ 151 (emphasis added). Professor Willig took those costs into account, and correctly did not deduct variable costs associated with *other* aspects of Pandora's business. *See* SX PFFCL ¶¶ 649-76. By contrast, Professor Shapiro indefensibly deducted all variable costs from his computation of Pandora's marginal profit on incremental plays. *See* SX PFFCL ¶¶ 996-1018.

Response to ¶ 152. As a consequence of Professor Shapiro's unexplained and undefended error, his calculations of webcasters' willingness to pay are artificially low. *Id.* That problem is compounded by Professor Shapiro's decision to use financial data for the 2018-19 period, which present an unrealistically dim picture of Pandora's prospects during the coming rate period. *See*

8/5/20 Tr. 330:18-22, 516:4-14 (Willig); 8/25/50 Tr. 3887:2-10 (Willig); Ex. 5600 ¶ 35 (Willig CWDT); Ex. 5601 ¶¶ 73-74 (Willig WRT); Ex. 5604 ¶ 83 (Tucker WDT).

Instead, Professor Shapiro could have and should have utilized the heavily vetted, Board-approved, and publicly filed projections that accompanied its merger proxy statement. Ex. 5600 ¶ 50 (Willig CWDT); 8/5/20 Tr. 347:23-25, 517:4-15 (Willig); 8/31/20 Tr. 4698:12-4699:8, 4700:3-4703:13 (Ryan). Those long-term projections show substantial growth in Pandora's profitability during the 2021-2025 rate period. *See* Ex. 5601 ¶ 75 & App. L (Willig WRT). That anticipated growth is corroborated by Sirius XM's $3.5 billion purchase price to acquire the company, Ex. 5601 ¶¶ 75-76 & App. L (Willig WRT), by statements from Sirius XM management, Ex. 5174 at 3, 8, and by growth projections contained in the very spreadsheet from which Professor Shapiro pulled his historical data. Ex. 5170; Ex. 5601 ¶ 77 (Willig WRT). While Pandora now claims that these projections are "overly optimistic," Professor Shapiro did not actually attempt to test that proposition through any kind of analysis. 8/20/20 Tr. 3208:15-18, 3214:4-10 (Shapiro).

Response to ¶ 153. SoundExchange does not dispute that Jason Ryan "deeply understands" the finances of Pandora. SXM PFFCL ¶ 153. Unfortunately, Professor Shapiro appears to have ignored most of what Jason Ryan had to say, and as a result did not come close to "accurately identify[ing], categoriz[ing], and properly allocat[ing] the incremental costs that vary with the number of listening hours" on Pandora's ad-supported service. *Id.*

SoundExchange has detailed how Professor Shapiro's approach to allocating variable costs is completely inconsistent with Mr. Ryan's trial testimony. SX PFFCL ¶¶ 1006-18. To cite only the most egregious example, Professor Shapiro allocates all product development expenses to Pandora Free and none to Pandora's subscription tiers or off-platform business—despite Mr. Ryan's unequivocal testimony that all of these other business lines incur this category of variable

costs. *Id.* (citing, *inter alia*, 8/20/20 Tr. 3209:12-3210:5 (Shapiro); 8/31/20 Tr. 4675:18-24, 4677:9-4678:19, 4679:8-4682:5, 4724:4-7 (Ryan); 8/6/20 Tr. 712:16-713:1 (Willig)).

Response to ¶ 154. On account of Professor Shapiro's improper reliance on historical data, and his unexplained and indefensible cost allocation errors, his computation of Pandora's marginal profit on incremental performances is artificially deflated and unreliable. Using the financial projections in Professor Shapiro's own backup file (and correcting his flawed cost allocation assumptions) yields variable profit rates of [ ] per play for Pandora Free and [ ] per play for Pandora Plus. Those rates are substantially higher than the variable profit rates calculated by Professor Shapiro, and are close to the variable profit rates of [ ] per play for Pandora Free and [ ] per play for Pandora Plus computed by Professor Willig using Pandora's publicly disclosed merger proxy. *See* Ex. 5601, App. L at 3 (Willig WRT).

iii. Professor Shapiro's Nash-in-Nash Bargaining Model Fails to Identify the Royalty Rates That Would Be Agreed to in an Effectively Competitive Market

Response to ¶ 155. No response.

Response to ¶ 156. For the reasons discussed at length elsewhere, the Shapley model is superior to the Nash-in-Nash model for the purposes at hand. 8/5/20 Tr. 320:4-15 (Willig); *see* SX PFFCL ¶¶ 1023-43.

Response to ¶ 157. SoundExchange incorporates its response to ¶ 156 *supra*.

Response to ¶ 158. SoundExchange incorporates its response to ¶ 156 *supra*. Among other shortcomings, (a) Nash-in-Nash artificially depresses the incremental value of a record company by treating it as the "last to arrive" to the set of negotiations, and (b) Nash-in-Nash may fail to yield a stable equilibrium if two but not three of the major record companies are specified as "must have," a proposition that the Services have not challenged. *See* SX PFFCL ¶¶ 1027-34 (first issue); ¶¶ 1035-43 (second issue).

SoundExchange adds only that the Services appear to misunderstand the "cooperative" nature of the Shapley Value model. The Shapley Value model analyzes the value created by every possible subset of bargaining parties. *See* Ex. 5600 ¶ 24 (Willig CWDT); 8/5/20 Tr. 428:14-429:17 (Willig). But it does not assume that all parties to each subset *actually work together*, in the sense of collusion or cartelization. 8/5/20 Tr. 335:4-14 (Willig). For instance, in a subset with distributor D, label A, and label B, the Shapley Value assesses the collective surplus created by a deal between A and D, and a deal between B and D. But it does *not* assume that all three parties collaborate with one another to jointly negotiate these two bilateral licenses. *See* 8/5/20 Tr. 335:1-14 (Willig). Nor, as specified by Professor Willig, does the model leave any room for assessing a potential deal between label A and label B, which would be an antitrust violation and hence is mathematically excluded from consideration. *See* SX Reply to JPFFCL ¶ 244 (citing, *inter alia*, 8/5/20 Tr. 335:1-14, 337:12-25, 389:8-9 (Willig); 8/6/20 Tr. 744:8-11 (Willig); 8/10/20 Tr. 1067:3-21 (Willig)).

Response to ¶ 159. Professor Shapiro's Nash-in-Nash model bears no resemblance to the hypothetical marketplace in which "conditions of effective competition" prevail and negotiations take place "between a willing buyer and a willing seller." Ex. 5601 ¶ 61 (Willig WRT). Professor Shapiro specifies two separate Nash-in-Nash bargaining models, one for ad-supported noninteractive webcasters and one for subscription noninteractive webcasters. *Id.* ¶ 58. Eschewing any notion of symmetry in the modeling of competition, each of Professor Shapiro's models delineates *one* noninteractive webcaster negotiating with *ten* different record companies, with each record company anticipating that the distributor has reached or will reach an agreement with all of the other nine record companies. *Id.* ¶¶ 58, 61; Ex. 4094 at 27 & App. F (Shapiro 2nd CWDT).

Professor Shapiro's specification reflects intensive competition among record companies. Indeed, Professor Shapiro even introduces competition between record companies where there is

none (such as between SME and its wholly-owned subsidiary, The Orchard, and between Universal and its wholly-owned subsidiary, INgrooves). Ex. 5601 ¶ 62 (Willig WRT). At the same time, Professor Shapiro suppresses any competition whatsoever between distributors (since each model contains only one). *Id.* at ¶¶ 10, 62; 8/5/20 Tr. 404:24-25 (Willig) ("[W]hat he didn't do is model them together in one bargaining framework."). In a correctly specified bargaining model, as in Professor Willig's Shapley Value model, both noninteractive distributors would be "interacting inside the model because there is substitution between them for audience." 8/5/20 Tr. 405:3-11 (Willig); *see* 8/10/20 Tr. 1076:5-19 (Willig) ("[T]he diversions from one to the other and then back, the second to the first, are indications of the kernel of competition, which is whether people find them to be alternatives."). This competition between distributors would increase the loss of audience experienced by either distributor that lost the content of a major record company. Ex. 5601 ¶ 62 (Willig WRT). This dynamic, in turn, increases the value of the record company's fallback position, decreases the value of the noninteractive distributor's fallback position, and thereby increases royalties. *Id.*

Response to ¶ 160. Professor Shapiro's bottom-line royalty rates for ad-supported and subscription webcasters are based on erroneous opportunity cost and willingness to pay inputs, and reflect a choice of bargaining model that is inferior to the Shapley Value model for the task at hand. *See supra* Resp. to ¶¶ 134-54. As such, his computed royalty rates are unreliable.

Response to ¶ 161. SoundExchange incorporates its response to ¶ 160 *supra*.

iv. SoundExchange's Criticisms of Professor Shapiro's Nash-in-Nash Bargaining Model Approach Are Well-Founded

1. Professor Willig's Critiques Are Supported By The Evidence and Economic Logic

Response to ¶ 162. SoundExchange incorporates its response to ¶ 159 *supra*. In addition, Professor Shapiro is wrong to claim that including only one noninteractive distributor in his model

creates a conservative result. Ex. 4094, App. F at 4 (Shapiro Second CWDT). This is only the case if the "power ratio for the record company in question is less than one." *Id.* That assumption is based exclusively on the flawed LSEs. Ex. 5601 ¶ 62 n.117 (Willig WRT); *see also* 8/5/20 Tr. 568:24-570:1 (Willig) (explaining power ratios). The results of the Modified Hanssens Survey indicate Power Ratios far in excess of one for [ ] and approximately equal to one for [ ]. Sirius XM's attempt to argue that the Modified Hanssens Survey cannot be used to calculate loss rates has absolutely no basis, as discussed below. *See infra* Resp. to ¶ 179.

Response to ¶ 163. SoundExchange incorporates its response to ¶ 162 *supra*.

Response to ¶ 164. SoundExchange incorporates its response to ¶ 162 *supra*. SoundExchange further adds that Professor Shapiro did not in fact run any "calculation" along the lines suggested by Sirius XM in this paragraph. *See* 8/19/20 Tr. 2749:17-2750:4 (Shapiro) ("[I]t's not a calculation; it's conceptual.").

Response to ¶ 165. No response.

Response to ¶ 166. Sirius XM misunderstands the setup of Professor Willig's critique, as well as its economic consequences. Professor Willig correctly observed in his written rebuttal testimony that the Nash-in-Nash model may not yield a stable equilibrium when applied to a scenario in which a noninteractive distributor requires the content of two but not three major record companies to sustain operations. Ex. 5601 ¶¶ 11, 67, 70 (Willig WRT). In that scenario, a negotiating record company that is the "last to arrive" in Professor Shapiro's hypothesized Nash Bargain is not forced to acquiesce to the distributor's demands. *Id.* at ¶ 68; 8/25/20 Tr. 3857:11-3858:18 (Willig). Instead, the negotiating record company has an alternative strategy available.

Ex. 5601 ¶ 69 (Willig WRT). It can threaten to go dark and thereby dramatically alter the distributor's fallback position in its negotiations with the remaining two majors (which would become "must have" by virtue of the initial record company's failure to license). *Id.*; 8/25/20 Tr. 3858:20-3859:6 (Willig); *see also* Ex. 5609 ¶¶ 75-76 (Harrison WDT); Ex. 5613 ¶ 55 (Piibe WDT). The distributor would have a pronounced incentive to commit to a greater royalty for the threatening major record company in exchange for preventing a blackout that would substantially improve the bargaining position of the other two majors. Ex. 5601 ¶ 69 (Willig WRT). This would significantly drive up the royalty paid to each major record company. *Id.*

This simple example demonstrates that Professor Shapiro's Nash-in-Nash bargaining model is not suitable for predicting market outcomes of a multi-party negotiation under circumstances where the incremental value created by each major record company is small when it is assumed to be the last to arrive, but much larger when it is not the last to arrive. Ex. 5601 ¶ 70 (Willig WRT); 8/6/20 Tr. 739:8-19, 741:2-3 (Willig); 8/25/20 Tr. 3860:3-22 (Willig). Because both the distributor and a holdout record company are motivated to deviate from the Nash-in-Nash equilibrium, the solution concept does not make compelling logical sense and is not likely to produce an empirically valid and stable equilibrium. Ex. 5601 ¶¶ 11, 70 & n.128 (Willig WRT); *see also id.* at ¶ 70 n.129 (summarizing recent academic literature on this topic); 8/10/20 Tr. 890:14-21, 891:1-8 (Willig); 8/25/20 Tr. 3859:7-11 (Willig); 8/20/20 Tr. 3188:5-25 (Shapiro).

Sirius XM's counter that Professor Willig's example is based on the "*incorrect* assumption that the major labels are must-haves" misses the point. First, under the example, only two and *not all three* of the major record companies are "must have." Second, the very point of the example is to demonstrate how the Nash-in-Nash solution concept cannot yield a reliable result under this specification. Third, there is simply no evidence in the record rebutting the proposition that a

noninteractive distributor needs at least two out of the three major record companies to remain viable. *See* Ex. 5051 at 11, 45; Ex. 5053 at 13; Ex. 1105 ¶ 114 n.118 (Peterson CWRT) ("Presumably some group of indies together with a major label may be able to shut down [a] non-interactive service."). As such, Sirius XM has no basis to call this an "*incorrect* assumption." Fourth, Sirius XM's claim that the contemplated specification would "lead to Myerson value" is not true—the Shapley Value model is entirely capable of solving for a multi-party negotiation with this specification, and that is precisely what Professor Willig has done in his Scenario 1 sensitivity test. *See infra* Resp. to ¶ 176.

2. The Services Fail to Defend Professor Shapiro's Opportunity Cost Calculation

Response to ¶ 167. There is no basis for Sirius XM's claim that Professor Willig's critique of Professor Shapiro's opportunity cost approach "rel[ies] heavily on unrealistic assumptions." SXM PFFCL ¶ 167; *see infra* Resp. to ¶¶ 169-73. Notably, that claim is not supported by any citations to the hearing record and should be stricken for failure to comply with the Judges' rules and order. *See Order* at 1; 37 C.F.R. § 351.14(c).

Response to ¶ 168. SoundExchange incorporates its response to ¶ 167 *supra*.

Response to ¶ 169. At trial, Professor Shapiro acknowledged that his approach to computing opportunity cost associated with diversion to subscription interactive and subscription satellite radio services was to [ ] 8/19/20 2763:9-13 (Shapiro). As such, there is no dispute over what Professor Shapiro did, only whether what he did is right or reasonable. It is not.

Professor Shapiro not only acknowledged that subscription services generate royalties on a per-subscriber basis, he acknowledged that [

[redacted] *See* 8/20/20 Tr. 3128:19-3129:6 (Shapiro); 8/26/20 Tr. 3945:5-12 (Shapiro). As a result, computing opportunity cost for these categories is as simple as multiplying the per-subscriber royalty by the diversion to new subscriptions. That is exactly the approach taken by Professor Willig. Ex. 5601 ¶ 49 (Willig WRT); Ex. 5600 ¶ 37 & App. D, Ex. D.1 (Willig CWDT); 8/5/20 Tr. 499:14-21 (Willig).

In its proposed findings, Sirius XM tries to avoid this straightforward conclusion through two defective arguments. First, Sirius XM gins up a misleading example, asking "how one would determine the additional royalties that a record company would receive if 5,000 performances per month were diverted from Pandora to new on-demand subscriptions." SXM PFFCL ¶ 169. This example proceeds from a fundamentally flawed premise—an assumption that the survey data reveals the number of diverted performances but *not* the number of diverted subscriptions.

This is just not the case—the number of new subscriptions is not an unknown. [redacted]. 8/20/20 Tr. 3135:12-3136:10, 3155:20-3156:3, 3242:18-23 (Shapiro). As Professor Shapiro himself conceded, this is exactly [redacted] 8/20/20 Tr. 3156:15-18 (Shapiro). Because the number of new subscriptions is supplied by the Hanssens Survey data, there is simply no need to answer any of the hypothetical questions posed by Sirius XM in its findings ("Would there by 10 new subscriptions with 500 monthly performances each? 500 new subscriptions with 10 monthly performances each?"). SXM PFFCL ¶ 169. These questions demonstrate, at most, that Professor Shapiro's approach introduced unnecessary steps that provided an opportunity to add in arbitrary

assumptions about plays-per-subscription. *See* 8/26/20 Tr. 3946:5-14 (Shapiro) (acknowledging lack of "real-world data" supporting his 800 plays-per-month assumption); SX PFFCL ¶¶ 975-77.

Second, recognizing that the Hanssens Survey is ultimately the arrow in its Achilles heel, Sirius XM attempts to distance itself from the results of that survey. Somewhat remarkably, Sirius XM criticizes Professor Willig for "assum[ing] that in the event of a label blackout, Pandora users would purchase new on-demand subscriptions at the rate indicated by the Hanssens (and/or modified Hanssens) diversion surveys." SXM PFFCL ¶ 171. Of course, this is not an assumption at all: It is data from the survey that Sirius XM commissioned. Lest there be any doubt about the matter, Sirius XM has assured the Judges that the Hanssens Survey "followed standard scientific methods to ensure the reliability of the results," *id.* ¶ 107, "implemented additional quality assurance measures to ensure that respondents provided informed and reliable responses," *id.* ¶ 110, and utilized a "sample size [that] was sufficient to draw statistically valid conclusions about the survey's results." *id.* ¶ 109. In light of these statements, it is nakedly results-oriented for Sirius XM to turn around and selectively criticize key empirical results from their own survey as nothing more than "faulty assumptions." *Id.* ¶ 167.

Perhaps knowing this, Sirius XM offers the same head fake it attempted at trial, claiming that the surveys are useful only for measuring diversion ratios and not loss rates. *See id.* ¶¶ 172-73. This argument simply has no bearing on the Hanssens Survey results relevant to this discussion, which measure the diversion of users to new subscriptions. That result plainly *is* a diversion ratio, a point that Professor Hanssens made clear at trial and that Professor Shapiro was forced to concede on cross-examination. 8/26/20 Tr. 4155:25-4156:5 (Hanssens); *see also* 8/20/20 Tr. 3155:20-3156:3, 3242:18-23 (Shapiro); 8/25/20 Tr. 3880:12-21 (Willig). Sirius XM's long digression into whether the surveys can measure loss rates, *see* SXM PFFCL ¶ 172, is an inappropriate attempt to

graft onto this issue the separate debate about whether the Judges should credit the LSEs, or Professor Willig's "must have" specification, or the result of the Modified Hanssens Survey indicating that [ ] of users would leave a noninteractive service upon a label blackout. Regardless of how that debate comes out, it is necessary to compute opportunity cost associated with diversion to new subscription services. Performing *that* calculation is as simple as reading and applying the results of the Hanssens Survey, which Professor Shapiro refused to do.

Response to ¶ 170. While Sirius XM attempts to demonstrate that Professor Shapiro's flawed approach is "robust to reasonable changes in assumptions," the "reasonable changes" they make in this paragraph are totally inconsistent with the results of the Hanssens Survey. This was exposed during Professor Shapiro's cross-examination. It is undisputed that the Hanssens Survey collected diversion information from 432 listeners to Pandora, who listen to about [ ] per month on average, [ ]. Ex. 4095 ¶ 49, Table 3 (Hanssens CWDT); 8/20/20 Tr. 3146:18-24, 3147:14-17 (Shapiro); Ex. 4107 at 51, Fig. 7 (Shapiro WRT). [ ], SXM PFFCL ¶ 107 (heading), [ ]. 8/20/20 Tr. 3149:17-21 (Shapiro). The Hanssens Survey also indicated that at least 82 of the 432 respondents would divert to new on-demand subscriptions. Ex. 4095 ¶ 53, Table 4 (Hanssens CWDT); 8/20/20 Tr. 3148:9-3149:2 (Shapiro). This implies that each new on-demand subscription would divert approximately [ ] that Professor Shapiro utilizes in his calculations. [ ]. 8/20/20 Tr. 3143:7-18 (Shapiro) (agreeing this is how the math works).

Response to ¶ 171. Sirius XM incorrectly suggests that Professor Willig's calculations rely on "completely unreasonable assumptions" related to plays per subscription. This is wrong for multiple reasons. First, and critically, the 2.6 plays per month figure is simply not a feature of Professor Willig's own affirmative approach—which, again, avoids the mistake of trying to derive a per-play calculation for services that pay royalties on a per-subscriber basis. When Professor Willig *does* convert total dollar opportunity cost into per-play opportunity cost, near the final step of his all-in calculation, he uses the average plays per month for Pandora users—[ ] plays per month for ad-supported and [ ] for subscription—which he derives directly from Pandora data. [ ]. 8/20/20 Tr. 3146:21-24 (Shapiro); *see* SX PFFCL ¶ 642 (citing, *inter alia*, Ex. 5601, App. L, L-4 (Willig WRT)); *see also* 8/19/20 Tr. 2773:24-2774:7 (Shapiro).

Second, even in the course of critiquing Professor Shapiro's approach, Professor Willig does not "assume" a 2.6 plays-per-month figure for new subscriptions. Rather, this number is the result of two sources of information being combined—specifically, the diversion ratios from the Modified Hanssens Survey (which is reliable) and the WMG point estimates from Professor Shapiro's LSEs (which are unreliable and understated). *See supra* Resp. to ¶¶ 65-100. [ ]. 8/10/20 Tr. 1019:2-1021:17 (Willig).

Third, both figures understate the number of streams for new monthly subscribers. The figures are based on surveys that were not intended to reflect *all* of the usage that new subscribers might engage in after switching to a new subscription on-demand service. 8/26/20 Tr. 4153:6-14 (Hanssens); 8/27/20 Tr. 4288:3-12 (Simonson). Rather, the relevant survey questions were

intended to capture only those increased plays that result from degradation to free internet radio. 8/26/20 Tr. 4150:20-4153:14 (Hanssens); 8/27/20 Tr. 4288:3-12 (Simonson). In fact, respondents who indicated they would listen less to free internet radio if a given record company's catalog was not available there were explicitly and consistently reminded that they were selecting and allocating points to ways of listening to music "in place of Free Internet Radio." *See, e.g.*, Ex. 4095, App. 6, at 100-02 (Hanssens CWDT). Moreover, the figures are based on survey questions that represent "a snapshot in time." 8/27/20 Tr. 4287:5-4288:1 (Simonson). As Professor Simonson explained, respondents might be expected to scale their usage over time, including as they come to enjoy the service or to get their money's worth. 8/27/20 Tr. 4287:5-4288:1 (Simonson).

[ ] 8/10/20 1016:15-24 (Willig). But this is a misinterpretation of what these calculations show, for the reasons stated above. [ ] *Id.*

Response to ¶¶ 172-73. SoundExchange incorporates its response to ¶ 169 *supra*.

3. Professor Shapiro Could Not and Therefore Did Not Offer Any Sensitivity Scenarios Proving the Robustness of His Model

Response to ¶ 174. There is no basis for Sirius XM's claim that Professor Willig's four scenarios "rely on faulty inputs and unrealistic assumptions to generate wildly inflated results." SXM PFFCL ¶ 174; *see infra* Resp. to ¶¶ 175-80. Notably, that claim is not supported by any citations to the hearing record.

Response to ¶ 175. Sirius XM criticizes Professor Willig's sensitivity tests for proceeding on the basis of his opportunity cost and willingness to pay inputs. This criticism is meritless for three reasons. *First*, the purpose of the scenarios was to test the sensitivity of Professor Willig's baseline model to changes in specifications that are heavily contested and/or open to reasonable disagreement, such as the percentage of diverted plays that a blacked-out record company would retain, or the extent to which the major record companies are or are not "must have." *See* Ex. 5601 ¶ 83 (Willig WRT). The purpose was not to evaluate every possible change that would result from every possible set of specifications. *Second*, there is no reason why Professor Willig should have tested his model for changes in his opportunity cost and willingness to pay inputs. These inputs were correctly generated using reliable data and they conservatively utilize diversion ratios from the Zauberman Survey (instead of the higher diversion ratios from the Services' own survey). *See* SX PFFCL ¶¶ 621-79; Ex. 5601 at ¶¶ 10 n.6, 12, 84 n.150, & 90, Fig.16 n.1 (Willig WRT); 8/6/20 Tr. 760:8-761:8 (Willig); 8/25/20 Tr. 3879:1-3880:21 (Willig). Professor Shapiro's alternative inputs are premised on obvious and indefensible quantitative errors—rather than, say, a different assumption about retention or a differing perspective on the validity of the LSEs. SX PFFCL ¶¶ 964-82, 996-1018. *Third*, Professor Shapiro performed zero sensitivity tests incorporating Professor Willig's opportunity cost and willingness to pay inputs. *See, e.g.*, Ex. 4107 at 64-67, at Fig. 12 nn.2-3, Fig. 13 nn.2-3, Fig. 14 nn.1-2, Fig. 15 nn.2-3 (Shapiro WRT). So to the extent this criticism has any validity, it is equally applicable to Sirius XM's economic testimony.

Sirius XM's criticisms of Professor Willig's sensitivity tests are completely inaccurate, for the additional specific reasons set out below. *See infra* Resp. to ¶¶ 176-80.

Response to ¶ 176. Sirius XM has no good argument to counter Professor Willig's Scenario 1, and they seem to know it. Even though this paragraph is pitched as a rebuttal to

Professor Willig's sensitivity test, Sirius XM conspicuously makes no effort to counter or disprove the most important feature of this scenario—the specification that a noninteractive distributor requires at least two major record companies to survive. *See* Ex. 5601 ¶ 84 & n.149 (Willig WRT); 8/25/20 Tr. 3878:10-25 (Willig). The Services mount no challenge to this specification because they have no evidence to disprove it. [ ]. 8/20/20 Tr. 3194:1-3, 3194:12-15 (Shapiro); 8/25/20 Tr. 3853:10-17 (Willig). As a consequence, the LSEs simply do not speak to the issue of whether a service can survive with only one of the majors.

At the same time, there is ample evidence in the record that supports the reasonableness of the Scenario 1 approach. Numerous documents from the Services indicate that catalog licenses with [ ] *See* Ex. 5051 at 11, 45; Ex. 5053 at 13; *see also* Ex. 5601 ¶ 36 n.66 (Willig WRT); Ex. 1105 ¶ 114 n.118 (Peterson CWRT); 8/5/20 Tr. 437:10-18 (Willig); 8/25/20 Tr. 3852:5-8, 3853:5-9 (Willig). [ ]. *See* Ex. 5614 ¶ 2 (Piibe WRT); 9/1/20 Tr. 5088:12-21, 5089:12-14 (Piibe); Ex. 5610 ¶ 9 n.2 (Harrison WRT); Ex. 5601 ¶ 36 (Willig WRT). ([ ]. Ex. 5614 ¶ 2 (Piibe WRT); 9/1/20 Tr. 5088:12-21, 5089:6-11, 5094:16-19 (Piibe).) [ ]. *See* 8/20/20 Tr. 3197:23-3198:4 (Shapiro); Ex. 5600 ¶ 48, Fig. 7 (Willig CWDT).

Having absolutely no evidence or counterargument to offer against the "needs two" specification, the Services put all their weight behind attacking Professor Willig's opportunity cost and willingness to pay inputs, as well as his choice of bargaining model. But those critiques simply do not withstand scrutiny. As to opportunity cost, the major driver of difference between Professor Willig's Scenario 1 and Professor Shapiro's approach is Professor Shapiro's indefensible decision to ignore the results of his client's own survey evidence. *See* SX PFFCL ¶¶ 964-79. As to willingness to pay, the major driver of difference is Professor Shapiro's reliance on clearly outdated, single-year historical financial data, and a cavalcade of cost allocation errors that Sirius XM does not attempt to defend with any vigor in their proposed findings. *See id.* ¶ 996-1018; *supra* Resp. to ¶¶ 150-54. To the extent Scenario 1 engages in an "overhaul," then, it is to sensibly replace Professor Shapiro's erroneous inputs with reliable ones.

That just leaves the choice of bargaining model. On that score, the Services find themselves perched at the end of a very thin reed. [

]. 8/20/20 Tr. 3188:5-25 (Shapiro); 8/26/20 Tr. 3938:16-19 (Shapiro). Of course, that is precisely the situation motivating Scenario 1. Nash-in-Nash is incapable of reaching a stable equilibrium under such circumstances and hence offers no advantages, and significant disadvantages, to the Shapley Value model under this specification. *See* SX PFFCL ¶¶ 1035-43; 8/6/20 Tr. 739:13-17, 741:2-3 (Willig); 8/25/20 3860:3-22 (Willig). [

]. 8/20/20 Tr. 3190:11-21 (Shapiro). But, as the economic literature makes clear, "recursive Nash-in-Nash" leads directly

back to the Shapley Value model, confirming the reasonableness of Professor Willig's Scenario 1 specification. 8/10/20 Tr. 891:4-8, 892:1-7, 967:2-9 (Willig).

And this brings the Services to their last, final gambit—positing that something called a "Myerson Value" approach must be used to modify the Shapley Value model. Holding aside that Professor Shapiro failed to advance such an approach in his written direct testimony, *see* 8/6/20 Tr. 763:12-13, 22, 765:8-9, there are manifold problems with any such claim. Professor Shapiro's "Myerson Value" equations are infected by an inexplicable, extra algebraic term. *See* SX PFFCL ¶¶ 822-32 (citing, *inter alia*, 8/25/20 Tr. 3871:19-20, 3872:2-8, 13-18 (Willig)). That term in no way advances Professor Shapiro's supposed goal of modeling negative contracting externalities. *See* SX PFFCL ¶¶ 824-25. It can only be explained as modeling profoundly unrealistic transfers of value that are economically equivalent to side payments or bribes. *Id.*; *see* 8/6/20 Tr. 750:15-751:22 (Willig); 8/25/20 Tr. 3873:19-25 (Willig). Regardless of how such transfers would actually manifest in the real world, they are anticompetitive and likely illegal under basic antitrust law. They have no place in any bargaining model that purports to derive the rate that a willing buyer and willing seller would negotiate in an effectively competitive market. As a direct consequence, the Services have no Myerson Value rates to offer that are in any way reliable for use in this proceeding. And they certainly do not have any Myerson Value alternative to propose that derives rates where two, but not three, of the major record companies are must have.

At the end of the day, Professor Willig's Scenario 1 stands as the most reasonable and conservative middle-road alternative among the various modeling approaches offered by the participants' economists. It corrects Professor Shapiro's indefensible opportunity cost and willingness to pay input errors, but uses the conservative diversion ratios from the Zauberman Survey. 8/25/20 Tr. 3879:1-3880:9 (Willig). It relaxes the specification that a noninteractive

service needs every major to survive, instead adopting Professor Shapiro's "power ratio" assumption. 8/25/20 Tr. 3878:10-25 (Willig). And it moots the Services' criticism of Professor Willig's retention ratio specification for independent labels. 8/25/20 Tr. 3878:21-25 (Willig). Despite all of these concessions, Scenario 1 still produces per-play rates of [redacted] (ad-supported) and [redacted] (subscription). *See* Ex. 5601 ¶¶ 84-86 (Willig WRT); 8/5/20 Tr. 353:24-354:5 (Willig); 8/6/20 Tr. 758:12-15 (Willig); 8/25/20 Tr. 3853:24-3854:9, 3854:20-25 (Willig).

Response to ¶ 177. Professor Willig's Scenario 2 sensitivity test conservatively assumes that no record company is a "must have," conservatively adopts Professor Shapiro's power ratios, and conservatively deploys Professor Shapiro's preferred bargaining model, Nash-in-Nash. Even so, Scenario 2 yields per-play royalty rates between [redacted] and [redacted]. Ex. 5601 ¶ 90, Fig. 16 (Willig WRT); *see* SX PFFCL ¶¶ 705, 708.

Sirius XM criticizes Professor Willig's Scenario 2 sensitivity test for proceeding on the basis of his opportunity cost and willingness to pay inputs. This criticism is meritless as explained in SoundExchange's response to ¶ 175. Sirius XM also criticizes Scenario 2 for adopting retention rates for independent labels between 90% and 100%. This level of retention is neither "impossible" not "completely unrealistic," for reasons set forth elsewhere. Resp. to ¶ 132; SX Reply to JPFFCL ¶ 233; SX PFFCL ¶¶ 614-20. In addition, the 90% retention assumption set out in this scenario is particularly immune to this attack. The Services note that some plays will divert to sources where the user cannot search for and play specific artists and songs. But the Zauberman Survey shows that this is true for less than 10% of plays diverted from an ad-supported noninteractive service. SX PFFCL ¶ 755, Fig. 19 (5.5% diversion to Sirius XM satellite radio and 4.3% diversion to subscription noninteractive) (citing, *inter alia*, Ex. 5600 ¶ 47, Fig. 6 & App. E at ¶¶ 14-20 (Willig CWDT)). A retention rate of 90% is equivalent to zero retention for the 10% of plays that divert

to other noninteractive services, plus full retention of plays that divert to sources where users can seek out and play exactly what they want to hear (such as subscription interactive services or CD purchases). This gives complete credit to Sirius XM's argument,[6] while accepting the evidence indicating that listeners use platforms like YouTube to plug holes in other services' catalogs. Resp. to ¶ 132; SX PFFCL ¶¶ 614-20; SX Reply to JPFFCL ¶ 233. And it still leads to rates "nowhere near the very, very low levels that Professor Shapiro calculated." 8/6/20 Tr. 758:25-759:6 (Willig).

Response to ¶ 178. Sirius XM has presented no credible evidence defending its retention rate assumption for independent labels. [redacted] SXM PFFCL ¶ 178. This evidence should be accorded no weight. Listeners subject to the suppression of [redacted] were not told about that blackout; as a result, their behavior is not indicative of what listeners would do if they *were* informed of a blackout. *See id.* ¶¶ 876-79. In addition, Sirius XM conspicuously excludes the users in the treatment group who "upgraded to Pandora Plus or Premium during the course of the experiment"—[redacted]. Ex. 4091 ¶ 32 (Reiley CWDT). Finally, the entire example is underpowered. Only [redacted] individuals were subjected to the [redacted] suppression, and only [redacted] of their spins were plays on Premium Access (outside of

[6] In fact, it gives more than full credit to this argument, as even Sirius XM accepts that a blacked-out label would retain at least its market share for plays diverted to noninteractive sources. SXM PFFCL ¶ 177. A retention rate of 90% could also be conceptualized as a retention rate of X% for plays that divert to Sirius XM satellite radio and other noninteractive webcasters, plus a retention rate of (100-X%) for plays that divert to other sources, where "X" is the label's natural market share of plays.

"radio mode"). *Id.* at ¶¶ 15, 20. This is insufficient to detect statistically meaningful changes in behavior. Ex. 5605 ¶¶ 58-60 (Tucker CWRT).

Sirius XM separately claims in this paragraph that "a modest, reasonable adjustment to Professor Shapiro's retention ratios would not significantly alter the resulting opportunity cost." SXM PFFCL ¶ 178. But it presents no empirical analysis supporting this point. The only evidence in the record on this issue is Professor Shapiro's trial testimony, in which he stated that his retention ratio is a "linear, multiplicative factor," and hence changes to that factor would scale accordingly. 8/19/20 Tr. 2780:15 (Shapiro). This is tantamount to saying that a small adjustment will produce a small change, while a big adjustment will produce a big change (as Professor Shapiro also acknowledged, *see* 8/19/20 Tr. 2780:19-23 (Shapiro)). That doesn't address the relevant question—whether a small or big change is warranted. A small adjustment from an unsupported and counterintuitive number is still going to be unsupported and counterintuitive. *See supra* Resp. to ¶ 132 (showing that, under Professor Shapiro's retention assumption, the black-out of an independent label could easily lead to a diversion of plays with zero retained by that label).

In contrast to Professor Shapiro—who presented no results from any sensitivity tests varying his retention rate assumption—Professor Willig has shown that even drastic departures from his baseline retention assumptions can still yield rates far above those proposed by Professor Shapiro. *See* SX PFFCL ¶ 708 (citing, *inter alia*, Ex. 5601 ¶ 90, Fig. 16 (Willig WRT)); *see supra* Resp. to ¶ 176; *infra* Resp. to ¶¶ 179-80.

Response to ¶ 179. Professor Willig's Scenario 3 sensitivity test conservatively assumes that no record company is a "must have," conservatively adopts Professor Shapiro's retention ratios, *and* conservatively deploys Professor Shapiro's preferred bargaining model, Nash-in-Nash.

Despite these limitations, Scenario 3 still yields per-play royalty rates of [ ] (ad-supported) and [ ] (subscription). Ex. 5601 ¶ 90, Fig. 16; *see* SX PFFCL ¶¶ 706, 708.

Sirius XM criticizes Professor Willig's Scenario 3 sensitivity test for proceeding on the basis of his opportunity cost and willingness to pay inputs. This criticism is meritless for the reasons set forth in SoundExchange's response to ¶ 175 *supra*. Sirius XM also criticizes the Power Ratio specifications in Scenario 3. As an initial matter, the Services misunderstand the set-up of this sensitivity test. As Professor Willig's written testimony made clear, [ ] Ex. 5601 ¶ 90, Fig. 16 n.2 (Willig WRT). Professor Shapiro has no basis to dispute a 1.0 power ratio specification for independent record companies, given his own written testimony. *See* Ex. 4094 at 76 (Shapiro Second CWDT) (calculating [ ] for independents). And the Services have no basis to dispute a 2.0 power ratio as to [ ], which is derived directly from the results of the Modified Hanssens Survey. SX PFFCL ¶ 1048; Ex. 5601 ¶ 88 & n.154 (Willig WRT); *see* 8/10/20 Tr. 1035:9-17 (Willig). For reasons explained elsewhere, there is absolutely no legitimacy to the Services' assertion that "survey evidence . . . cannot be used to determine the *magnitude* of lost listening." JPFFCL ¶ 179; *see supra* Resp. to ¶ 112; SX PFFCL ¶ 754.

Finally, while the Services complain that Scenario 3 applies an exaggerated 2.0 power ratio to [ ], Professor Willig showed in this very scenario why applying a lower power ratio would barely move the needle. In particular, he observed that using a "Power Ratio" of [ ] (as deduced from the Modified Hanssens Survey results and [ ] play share) produces royalty rates starting in 2021 of [ ] per play for ad-supported noninteractive distributors and [ ] per play for subscription noninteractive distributors. Ex. 5601 ¶ 88 n.155 (Willig WRT).

Response to ¶ 180. Finally, in Scenario 4, Professor Willig demonstrated the results of applying a "Power Ratio" of 1.0 to all [redacted] record companies (and all indies). This Power Ratio assumes that the lowest possible result derivable from the Modified Hanssens Survey applies to all labels. *See* Ex. 5601 ¶ 62 n.117 (Willig WRT). This is a reasonable, empirically grounded, and if anything extremely conservative assumption to deploy. It is a significant departure downward from the specification that every major record company is a "must have," or even the proposition that two out of three major record companies is a "must have." It is the most conservative conclusion that one can draw from the Modified Hanssens Survey, and even more conservative than applying individualized Power Ratios derived from those results (which would indicate a [redacted]). *Id.* Indeed, even Professor Shapiro purports to have run sensitivity tests utilizing a 1.0 Power Ratio. *See, e.g.*, Ex. 4107 at 65 (Shapiro WRT). Sirius XM's only argument against this specification is its utterly baseless assertion that surveys simply cannot provide evidence of loss rates. *See supra* Resp. to ¶ 112; SX PFFCL ¶ 754.

Scenario 4 not only drops the specification that every major record company is a must have and replaces that specification with the most conservative Power Ratio derivable from the Modified Hanssens Survey, it also deploys a Nash-in-Nash bargaining model. Notwithstanding these conservative assumptions, Scenario 4 still leads to results much higher than Professor Shapiro has derived. Ex. 5601 ¶ 90, Fig. 16 (Willig WRT).

Sirius XM also criticizes Professor Willig's Scenario 4 sensitivity test for proceeding on the basis of his opportunity cost and willingness to pay inputs. This criticism is meritless for the reasons set forth in SoundExchange's response to ¶ 175 *supra*. In addition, Sirius XM criticizes Scenario 4 for adopting an "inflate[d]" retention rate, but again this has no merit. Professor Willig

conservatively took the midpoint between his retention specification and Professor Shapiro's retention specification—for the simple and appropriate reason that this is the literal, mathematical compromise between the experts' positions. That is again a conservative approach, given Professor Shapiro's unrealistic retention specification for independent labels. *See supra* Resp. to ¶ 132.

B. Professor Shapiro's Benchmarking Approach Departs from *Web IV* Methodology and Is Unreliable on Methodological and Empirical Grounds

Response to ¶ 181. SoundExchange disputes that Professor Shapiro correctly employed the ratio equivalency concepts from *Web IV*. *See* SX PFFCL ¶¶ 129-41.

Response to ¶ 182. Professor Shapiro's adjustments are unsuccessful and/or unnecessary. *See* SX PFFCL ¶¶ 129-56, 240-48, 259-493.

i. Identifying the Effective Per-Performance Rate Is Not the Necessary Starting Point for the Analysis

Response to ¶ 183. No response.

Response to ¶ 184. SoundExchange agrees that Professor Shapiro calculated effective rates using full price and discount plans, but he then failed to implement an interactivity adjustment in a manner that accounted for the prices consumers actually pay for such plans. *See* SX PFFCL ¶¶ 131-41; *see infra* Resp. to ¶ 190.

Response to ¶ 185. *See infra* Resp. to ¶ 186.

Response to ¶ 186 (Body). SoundExchange agrees that the statutory rates will apply to all subscribers in the target market, regardless of their chosen plan. But that observation begs the question of whether subscribers in the target market have access to and use discount plans. If they do not have access to and use discount plans, then the obvious apples-to-apples comparison is to use full-price plans from the subscription interactive market as the benchmark for the full price plans in the target market. Because [redacted]

[redacted]]. 8/11/20 Tr. 1215:6-16 (Orszag).

In addition to attacking Mr. Orszag on a conceptual level, SXM challenges the factual premise that the target market offers little in the way of discount plans. But Mr. Orszag demonstrated, without contradiction, that in 2018 discount plays accounted for [redacted] of subscription interactive services' total plays. By comparison, in 2018 discount plays accounted for only [redacted] of all plays on Pandora Plus, and these were [redacted]). Ex. 5603 ¶ 87 (Orszag WRT). SXM responds that Pandora Plus is not a statutory service, but that is pure sophistry. [redacted]. *See* Ex. 5321 at 7 ([redacted]); 8/31/20 Tr. 4720:5-8 (Ryan) ([redacted]).

After attempting to distract from the fact that the largest relevant streaming service, Pandora, does not offer discount plans for its Plus service ([redacted]), SXM suggests Sirius XM's webcasting service as an example of a statutory webcaster that offers discount plans. This too is unavailing. As Professor Shapiro testified, the vast majority of Sirius XM subscribers pay for a bundle of satellite broadcasting, music content, non-music content, and webcasting, and he was at pains to note that the few webcasting-only subscribers seemed to particularly value non-music content. Ex. 4094 at 9-10 (Shapiro Second CWDT); *see also* Ex. 4092 ¶ 20 (Witz WDT) ("More than 98% of our internet radio subscribers get that service bundled with satellite radio in some fashion."). Mr. Orszag pointed out that, for

these reasons, one would have to make several assumptions to analyze the music-only-webcasting-only aspects of the Sirius XM service. 8/13/20 Tr. 1954:5-24 (Orszag). Ultimately, any discounting on the satellite service is not relevant here. Tellingly, to the extent that Sirius XM now offers a stand-alone subscription limited to the webcasting service, there is zero evidence that discount plans are available for that service. *See* Ex. 4092 ¶¶ 18-20 (Witz WDT).

Response to ¶ 186 (Footnote). The Services concede that Mr. Orszag's decision to rely individual plans is conservative if ratio equivalency is implemented using a percentage of revenue rate. For reasons discussed elsewhere, and at length, using percentages of revenue in the ratio equivalency analysis is the correct approach in this case. *See* SX Reply to JPFFCL ¶ 24.

Response to ¶ 187. SoundExchange incorporates its response to ¶ 182, *supra*.

ii. Professor Shapiro's First Interactivity Adjustment Is Flawed

Response to ¶ 188. No response.

Response to ¶ 189. Professor Rubinfeld's use of ratio equivalency was intended to result in a per-play rate that provided the record companies with the same percentage of revenue in the target market that the record companies earned in the benchmark market. *Web IV*, 81 Fed. Reg. at 26326, 26338; SX Reply to JPFFCL ¶ 24. Professor Shapiro's analysis entirely departed from Professor Rubinfeld's analysis in this critical respect.

Response to ¶ 190. Sirius XM/Pandora's attempt to defend Professor Shapiro's analysis flies in the face of his testimony during trial. Willingness to pay is not a "confounding variable." Consumers on discount plans, whether student, family or military, have manifested a lower willingness to pay for the service. [[redacted]]. *See* 8/19/20 Tr. 2851:18-24 (Shapiro) ([[redacted]]). The price that consumers are willing to pay for a service that offers interactive functionality is not a confounding variable—it is a critical variable. Professor

Shapiro himself said so. [ ]. 8/19/20 Tr. 2939:12-21 (Shapiro). Plainly he did not do so. Professor Shapiro looked only at what *some* consumers were willing to pay for the service. Indeed, when criticizing Mr. Orszag for using only full-price plans in his analysis, Professor Shapiro had this to say: [ ] 8/19/20 Tr. 2898:22-2899:6 (Shapiro).

Professor Shapiro should have heeded his own words. [ ]. 8/10/20 Tr. 1164:12-24, 1167:7-22 (Orszag). [ ]. 8/19/20 Tr. 2958:17-2959:12 (Shapiro) ([ ]).

Response to ¶ 191. SoundExchange incorporates SX PFFCL ¶¶ 129-41 by reference.

Response to ¶ 192. Again Sirius XM/Pandora's arguments run afoul of Professor Shapiro's testimony and basic logic. With respect to Professor Shapiro's testimony, [ ] 8/19/20 Tr. 2939:12-21 (Shapiro). Yet, for his

[redacted]

Response to ¶ 193. *See infra* Resp. to ¶ 194.

Response to ¶ 194. There is no genuine doubt that ARPU for interactive services is substantially lower than the list prices for individual subscriptions. Dr. Leonard observed that [redacted].” Ex. 2160 ¶ 84 and n.181 (Leonard CWRT) ([redacted]). Another source cited by Dr. Leonard puts Spotify’s interactive service ARPU at [redacted] its list price of $9.99 for a full price individual plan. *See id.* Mr. Orszag also testified that ARPU in the interactive market has fallen. 8/11/20 Tr. 1197:20-1198:11 (Orszag).

[redacted]. 9/3/20 Tr. 5507:9-5508:1 (Adadevoh). [redacted]. Ex. 5611 ¶ 13 (Adadevoh WDT). [redacted] 9/2/20 Tr. 5174:11-15 (Piibe); *see also* 9/2/20 5162:9-14 (Piibe) ([redacted]). A document prepared in the ordinary course of business by Sony in December 2018 [redacted]

[redacted] Ex. 5475 at 8; *see* Ex. 5613 ¶ 38 (Piibe WDT).

Despite the attempt of Professor Shapiro to muddy the waters ([redacted], *see* 8/19/20 Tr. 2944:2-17 (Shapiro)), [redacted]. 9/2/20 Tr. 5175:23-5176:3 (Piibe). Instead, the record companies calculate ARPU based on the average number of actual users on the plans. 8/11/20 Tr. 1199:14-1200:7 (Orszag); *see also* 8/11/20 Tr. 1200:22-1201:20 (Orszag) (ARPU is calculated based on the number of actual users, not the number of permitted users or the number of devices); 9/3/20 Tr. 5507:5-16 (Adadevoh) ([redacted]); 9/2/20 Tr. 5164:4-7 (Piibe) ([redacted]); 9/2/20 Tr. 5176:11-18 (Piibe) ([redacted]).

As SoundExchange demonstrated in its initial proposed findings of fact, reasonable estimates of interactive service ARPU range from [redacted] than the headline price of $9.99 for the full-price individual subscriptions that Professor Shapiro used as an input for his interactivity adjustment. *See* SX PFFCL ¶ 140.

Although Pandora's [redacted] indicates that the ARPU for Pandora interactive service is [redacted], Ex. 5321 at 7, [redacted]. 8/19/20 Tr. 2945:17-2946:1 (Shapiro). It would make little sense to use that number as a measure of willingness to pay, unless one believes that five people who share a $15.99 subscription have a higher willingness to pay than a single

person who pays $9.99. Dr. Peterson apparently would not make such an argument. *See* Ex. 1105 ¶ 53 (Peterson CWRT) ("Typically, a family plan costs $14.99, or about one and one-half times the price of an individual plan. Thus, even for a family of two individuals, the family plan represents a savings."). It seems unlikely that even Professor Shapiro would make such an argument. Professor Shapiro testified that [ ]. 8/19/20 Tr. 2851:18-2852:4 (Shapiro) ([ ]). The very nature of price discrimination is to offer a lower price to consumers with lower willingness to pay.

iii. Professor Shapiro's Second Interactivity Adjustment Is Unnecessary

Response to ¶ 195. Professor Shapiro's second interactivity adjustment is wrong and unnecessary, in large part because he side-steps the critical question of whether the additional functionality obtained by Pandora under its direct licenses has value in the downstream market. [ ]. *See infra* Resp. to ¶¶ 196-97; SX PFFCL ¶¶ 142-56.

Response to ¶ 196. In the cited portion of *Web IV*, the Judges responded to a criticism of Professor Rubinfeld's analysis offered by Dr. Katz: That "the numerator in Dr. Rubinfeld's so-called 'non-interactive' ratio contains revenues from services that are not DMCA-compliant."[7] *Web IV*, 81 Fed. Reg. at 26348. This focus on whether non-statutory functionality contributed to the revenue of the non-DMCA compliant service is correct if analyzed on a per-unit basis. If the additional functionality adds to the per-unit revenue of the service, an adjustment should be considered. Mr. Orszag made exactly this point. Ex. 5602 ¶ 177 (Orszag WDT). Professor Shapiro implicitly acknowledged the same, claiming that additional functionality increased the "per-

[7] The Judges were little troubled by this criticism, finding that "such differences in functionality are of relatively low importance in the subscription market in light of the evidence of downstream functional convergence." *Web IV*, 81 Fed. Reg. at 26348 n.105.

performance value" of Pandora Plus. Ex. 4107 at 34 n.92 (Shapiro WRT). The problem with Professor Shapiro's second interactivity adjustment is that, [ ]. Under the logic of *Web IV*, therefore, no adjustment is necessary.

Response to ¶ 197. SXM claims in this paragraph that the additional functionality licensed by Pandora was "worth more to consumers than [it] cost to provide." The interactivity adjustment is intended to measure the value of interactivity based on subscribers' willingness to pay for interactive functionality in the downstream market, *see Web IV*, 81 Fed. Reg. at 26345, 26348, and [ ]. 8/19/20 Tr. 2959:20-2960:7 (Shapiro). [ ]. *Id.* at 2963:25-2964:5 (Shapiro). And SoundExchange has demonstrated in its proposed findings of fact that additional functionality has not increased per-unit revenue. *See* SX PFFCL ¶ 154.

Recognizing the futility of proving any increase in the "per-performance value" of Pandora Plus that Professor Shapiro talks about in his written testimony, Ex. 4107 at 34 n.92 (Shapiro WRT), SXM falls back on two arguments. The first is that there must be some value, somewhere, for some reason, because [ ]. But the reason matters. For example, the additional functionality that Pandora obtained for the Plus service [ ]. *See, e.g.*, Ex. 5012; Ex. 5013; Ex. 5083. [ ]

[redacted] Ex. 4090 ¶ 22 (Phillips WDT) (emphasis added). [redacted] Equally plausible is the possibility that the rates negotiated by the record companies and Pandora in 2016 will not survive the round of renewal negotiations in 2020; [redacted]. *See* 8/19/20 Tr. 2962:15-17 (Shapiro) ([redacted]). Professor Shapiro evidently gave no thought to any of these possibilities.

The second argument offered by SXM is that [redacted]. This argument is factually unsupported, *infra* Resp. to ¶ 200, and economically irrelevant, *infra* Resp. to ¶ 202.

Response to ¶ 198. No response.

Response to ¶ 199. Even if accurate, the stated explanations are irrelevant. None of them change the fact that [redacted]. *Infra* Resp. to ¶ 202.

Response to ¶ 200. SXM misrepresents the facts. *First*, there is no evidence [redacted]. Professor Shapiro's testimony in this regard relies solely on the written testimony of Christopher Phillips. *See* Ex. 4107 at 33-34 and n.90 (Shapiro WRT). However, Mr. Phillips does *not* testify that [redacted]. *See* Ex. 4090 ¶¶ 18-23 (Phillips WDT); *see also* 8/19/20 Tr. 2961:6-17 (Shapiro)

([ ]); SX PFFCL ¶ 146.

Second, there is no evidence (and SXM cites none) that the additional functionality actually had any effect on subscriber growth. SXM offers in footnote 22 of this paragraph evidence that the number of subscribers has increased by roughly 10% (from 3.9 million subscribers to 4.39 million). But nothing establishes causation. All subscription music streaming services grew substantially during this time. *See* Ex. 5604, App. 1 & 2 (Tucker WDT). There is no basis to find that the increased subscriber count represents anything other than ordinary organic growth.

Finally, after admitting that subscriber growth (or lack thereof) could be "caused by other factors," SXM tries to evade the force of that concession by claiming in footnote 23 that additional functionality was viewed by Pandora as necessary to "stem subscriber losses." Again, Sirius XM and Pandora cite to the written testimony of Mr. Phillips, and again Mr. Phillips said no such thing. He does not discuss subscriber losses, or potential subscriber losses, much less any link to the licensing and pricing decisions. Ex. 4090 ¶¶ 18-23 (Phillips WDT).

Response to ¶ 201. This paragraph consists of rank speculation. *Supra* Resp. to ¶ 200.

Response to ¶ 202. SoundExchange incorporates its response to ¶ 203, *infra*.

Response to ¶ 203. For reasons detailed elsewhere, Mr. Orszag's analysis calculates a per-play rate that makes the ratio of revenue to royalties in the target market equal the ratio of revenue to royalties in the benchmark market. *See* SX Reply to JPFFCL ¶ 24. It is not correct that only less listening by Pandora Plus subscribers would demonstrate higher value. Higher revenue per subscriber (*i.e.,* an increase in the subscription price) would likewise produce higher value.

In any event, the number of subscriptions sold does not affect calculation of the royalty rate for Mr. Orszag's analysis *or* for Professor Shapiro's analysis. In its proposed findings of fact,

SoundExchange explained why, with respect to Mr. Orszag's analysis, revenue per unit matters for royalty calculation purposes, rather than the number of subscriptions. SoundExchange incorporates that explanation here. *See* SX PFFCL ¶¶ 149-50. The same is true of Professor Shapiro's analysis. Professor Shapiro first calculates the effective per-play rate in his benchmark market. That calculation has no necessary relationship to the number of subscriptions sold. Suppose a service sold just one subscription and paid royalties of $5.00 per month, and its lone subscriber listened to 500 plays per month. That Service would pay an effective per-play royalty of $0.01. Suppose another service had one million subscribers and paid $500 million per month in royalties, and its one million subscribers on average each listened to 500 plays per month. It too would pay an effective per-play royalty of $0.01. Professor Shapiro takes the effective per-play royalty from his benchmark market (which is unrelated to the number of subscriptions), and adjusts it by the ratio of the list prices for interactive and subscription mid-tier services—$9.99 and $4.99—a ratio that again is unaffected by the number of subscriptions. In short, no part of Professor Shapiro's interactivity analysis depends on the number of units sold. All that matters are the royalties per unit in the benchmark market, and the prices per unit in the downstream market.

SXM's unsupported claim that Pandora benefited from additional functionality because added functionality led to subscriber growth is thus irrelevant. Absent [[redacted]], there is no reason to further adjust for interactivity.

Response to ¶ 204. SoundExchange incorporates its responses to ¶¶ 197, 199, 200-01, 203.

Response to ¶ 205. Five years ago, the Judges set a rate based on the willing buyer/willing seller standard. Now, the Participants are before the Judges to determine whether that is still an appropriate rate. In taking that rate as a current market rate for purposes of his second interactivity adjustment, Professor Shapiro assumes his conclusion. *See* SX PFFCL ¶¶ 156, 237-39.

Response to ¶ 206. No testifying economist in this case opined that [ ]. *See* SX PFFCL ¶ 487 n.18.

iv. Professor Shapiro's "Skips" Adjustment Relies on Suspect Data

Response to ¶¶ 207-08. No response.

Response to ¶ 209. SoundExchange incorporates responsive material in its proposed findings by reference. *See* SX PFFCL ¶¶ 242-44.

v. Professor Shapiro's Effective Competition Adjustment Proves that No Competition Adjustment Is Necessary

Response to ¶ 210. No response.

Response to ¶ 211. Although SoundExchange agrees that complementary oligopoly power "can" lead to supracompetitive rates, the proposition that a market with must-have suppliers cannot be effectively competitive finds no support in past determinations. SX Reply to JPFFCL ¶¶ 12-13. It is also inconsistent with testimony that Professor Shapiro gave at trial, testimony that Professor Shapiro gave in *Web IV*, and the record developed in this proceeding. *See* SX Reply to JPFFCL ¶¶ 12, 62; *see also* SX PFFCL ¶ 349.

Response to ¶ 212. SoundExchange agrees that the Majors remain must-have for interactive services, *in the long-term*. SX Reply to JPFFCL ¶ 61. The Majors are also must-have for noninteractive services. *See* SX PFFCL ¶¶ 583-611, 852-962.

Response to ¶ 213. SoundExchange incorporates its response to ¶ 211, *supra*.

Response to ¶ 214. The claim that a market cannot be effectively competitive if it contains multiple must-have labels finds no support in law, economics, or the record. SX Reply to JPFFCL ¶ 12; SX PFFCL ¶¶ 259-489. Moreover, Professor Shapiro's attempt to distinguish his prior

testimony that steering-based price competition can drive effectively competitive rates, *see* SX PFFCL ¶ 349, has no merit. The Judges have made clear that steering-based price competition can generate rates consistent with effective competition. SX Reply to JPFFCL ¶ 12. Moreover, the record illustrates and Professor Shapiro has acknowledged that steering-based price competition affects the average rate rather than marginal royalty rate. SX Reply to JPFFCL ¶ 17. Because an appropriately selected interactive benchmark is based on rates consistent with effective competition, SX PFFCL ¶¶ 259-489, and because Sirius XM has not carried its burden to show that effective competition is lacking in negotiation of each of its benchmark agreements, no competition adjustment is needed. Finally, SoundExchange incorporates its response to the Services' JPFFCL ¶ 7 (addressing level of competitiveness required when setting rate).

Response to ¶ 215. No response.

Response to ¶ 216. Professor Shapiro's analysis actually proves that no adjustment is necessary. *See* SX PFFCL ¶¶ 483-89. Sirius XM cites Professor Shapiro for the proposition that the effective per play rate for [ ] and reflects effective competitive. And, according to Professor Shapiro, [ ]. Ex. 4094 at 40 & Table 10 (Shapiro Second CWDT); 8/20/20 Tr. 3112:13-19 (Shapiro). Thus, [ ]. 8/20/20 Tr. 3112:5-3113:20 (Shapiro); 8/10/20 Tr. 1170:7-23 (Orszag). Of course, Mr. Orszag's benchmark analysis is based on Spotify rates. Ex. 5602 ¶ 86 (Orszag WDT). If the effective per play rates paid by Amazon Prime reflect a competitive market rate (and Professor Shapiro says they do), and [ ], *see* 8/20/20 Tr. 3113:11-20 (Shapiro)), and if one can calculate an effective competition adjustment by comparing the competitive Amazon Prime rates with benchmark market rates (which is Professor Shapiro's

theory), then by Professor Shapiro's logic [[redacted]]. 8/25/20 Tr. 3839:1-3840:4 (Orszag); *see* SX PFFCL ¶¶ 483-89.

Response to ¶ 217. SoundExchange incorporates its response to the Services' JPFFCL ¶ 62. The conclusory assertions in this proposed finding reflect the Services' failure to engage with the record developed in this case, which demonstrates that rates negotiated in Mr. Orszag's benchmark agreements are consistent with effective competition. *See* SX PFFCL ¶¶ 259-489.

Response to ¶ 218. SoundExchange incorporates its responses to ¶¶ 216, 220.

Response to ¶ 219. SoundExchange incorporates its response to ¶ 220. *See also* SX PFFCL ¶¶ 487-89.

Response to ¶ 220. Professor Shapiro acknowledged that his proposed competition adjustment is overstated, 8/19/20 Tr. 2891:19-25 (Shapiro), but offered no way to adjust it.

C. Professor Shapiro's Benchmarking Approach for Advertising-Supported Webcasting Services Is Entirely Inconsistent With *Web IV*

i. Professor Shapiro's Benchmark Starting Point for Advertising-Supported Webcasting Services Must Be Adjusted Upward

Response to ¶¶ 221-24. No response.

Response to ¶ 225. Mr. Orszag did, in fact, calculate the WMG rates including the "true-up," which results in Professor Shapiro's effective per-play royalty paid by Spotify to WMG increasing to [[redacted]] per play, and the weighted average effective per play royalty for all three major record companies increasing to [[redacted]] per play, without the marketing/advertising credit. Ex. 5603 ¶ 81 and Table 8 (Orszag WRT).

Response to ¶ 226. Contrary to what Sirius XM says in this paragraph, SoundExchange's rate proposal for ad-supported noninteractive commercial webcasters is $0.0028 per play, not $0.0030. Moreover, that rate proposal represents the upper end of the range between the rate derived from Professor Willig's modeling approach of $0.0029 per play (Ex. 5600 ¶ 12 (Willig

CWDT), and the rate derived from Mr. Orszag's benchmarking approach of $0.0025 per play. Ex. 5602 ¶ 9 (Orszag WDT). *See* SX PFFCL ¶ 60. Given the facts that (1) the effective royalty rate for Spotify's ad-supported service is [ ] per play if advertising credits are included (Ex. 5603 ¶ 81 and Table 8 (Orszag WRT)), (2) Spotify's ad-supported service is effective at upselling to the subscription service [ ] (SX PFFCL ¶¶ 177-88), and (3) interactive functionality demonstrably adds little value in the downstream market for ad-supported services (SX PFFCL ¶¶ 212-23), the result of Mr. Orszag's analysis makes perfect sense.

ii. Adjustments to Professor Shapiro's Benchmark Rate for Advertising-Supported Webcasting Services

Response to ¶ 227. SoundExchange incorporates its response to ¶ 226, *supra*.

Response to ¶ 228. Professor Shapiro's downward adjustments are unsuccessful and/or unnecessary. *See* SX PFFCL ¶¶ 129-41, 212-23, 240-48, 259-493.

iii. Professor Shapiro's Wrongly Uses His Interactivity Adjustment From the Subscription Market to Adjust for Interactivity in the Ad-Supported Market

Response to ¶ 229. Whether or not interactive functionality is valuable depends on its value to consumers in the downstream market. [ ]. 8/19/20 Tr. 2975:23-2976:8 (Shapiro). [ ]. 8/19/20 Tr. 2977:10-2980:7 (Shapiro). Professor Shapiro used an interactivity adjustment derived from the subscription market to adjust his ad-supported rates, despite the near-universal agreement (including other economists for the Services) that revenue generation in the ad-supported market is entirely different from the subscription market. *See* Ex. 2160 ¶ 54 (Leonard CWRT) ("[T]he relationship between revenue generation and interactivity is

substantially different for ad-supported than for subscription services."); 8/25/20 Tr. 3702:25-3703:16 (Peterson) ([ ]). Doing so was improper.

Response to ¶ 230. Professor Shapiro's second interactivity adjustment (based on mid-tier subscription services) was fatally flawed when used to adjust for interactivity in the subscription market, *see* SX PFFCL ¶¶ 142-56, and it has no possible application in the ad-supported market. *See Id.* at ¶¶ 212-23; *supra* Resp. to ¶ 196 & n.1.

Response to ¶ 231. That the Spotify ad-supported service is fully interactive when it is used on a desktop does not save Professor Shapiro's interactivity adjustment. As Professor Shapiro acknowledged, [ ]. 8/19/20 Tr. 2985:11-25 (Shapiro). [ ], 8/19/20 Tr. 2986:18-23 (Shapiro), [ ]. 8/19/20 Tr. 2984:15-2984:21 (Shapiro). [ ] 8/19/20 Tr. 2986:24-2987:9 (Shapiro).

Response to ¶ 232. The rate for a single play is a far different thing than the rate for a service. If Pandora and Sirius XM think the rates of [ ] for Premium Access plays represent the market value of interactivity to an ad-supported service that offers interactive functionality, then they should abandon the effective per-play for Spotify's ad-supported service that Professor Shapiro uses as his benchmark and start with these [ ] rates. Moreover, Sirius

XM ignores the fact that [ ]. The contracts on which Sirius XM and Pandora rely make exactly this point: [ ] Ex. 5067 at 1.

Response to ¶ 233. [ ]. 8/19/20 Tr. 2905:5-18 (Shapiro). However, he never explained why an interactivity adjustment based on a mid-tier subscription service (with the same functionality available on both desktop and mobile devices) is applicable to Spotify's ad-supported service (with functionality that differs depending on whether the user is mobile or desk-bound). Professor Shapiro's tactical retreat avails him nothing. In the end, his second interactivity adjustment is unnecessary in the subscription market, *see* SX PFFCL ¶¶ 142-56, and has no possible application in the ad-supported market, where revenue generation in the downstream market by all accounts differs from the subscription market. *See* SX PFFCL ¶¶ 212-23.

Response to ¶ 234. No response.

Response to ¶ 235. At trial, Professor Shapiro indeed discussed whether it made sense to use advertising revenue to measure the value of interactivity. To be very clear: *Professor Shapiro said it would be reasonable to use advertising revenue to measure the value of interactivity.* No matter how much Sirius XM try to walk it back, the testimony is clear. *See* SX Reply to JPFFCL ¶ 55 (quoting testimony at length). [ ] 8/19/20 Tr.

2979:2-6 (Shapiro). [ ]. 8/19/20 Tr. 2979:9-2980:7 (Shapiro). Sirius XM tries to re-write Professor Shapiro's testimony because, whether one looks at revenue per play (reflecting the advertisers' willingness to pay) or ARPU (reflecting users' willingness to listen to ads), [ ]. *See* SX PFFCL ¶¶ 219-22.

Sirius XM falls back on the idea that [ ]. 8/20/20 3248:13-24 (Shapiro). And that is the relevant comparison, because Professor Shapiro uses Spotify's ad-supported service as his benchmark. It is undeniable that comparing Spotify's interactive ad-supported service to Pandora's noninteractive service [ ], and there is no reason to believe (and no evidence to suggest) that Spotify is any less sophisticated than Pandora when it comes to selling advertising. The necessary conclusion is that interactivity contributes little or no value for advertising supported services.

Response to ¶ 236. Again, there is no reason to think Pandora's "prowess" is any different from that of Spotify. This is the key issue and one Sirius XM elides. *See supra* Resp. to ¶ 235.

Response to ¶ 237. SoundExchange incorporates its response to ¶ 232, *supra*, and its response to ¶ 27 of the Services' JPFFCL.

iv. Professor Shapiro's "Skips" Adjustment Relies on Suspect Data

Response to ¶ 238. The deficiencies in Professor Shapiro's skips adjustment were addressed in SoundExchange's Proposed Findings. *See* SX PFFCL ¶¶ 242-244.

v. Professor Shapiro's Effective Competition Adjustment Proves that No Adjustment Is Necessary

Response to ¶ 239. Again, under Professor Shapiro's theory that the effective per play rates paid by [ ] reflect an effectively competitive rate, the fact that Mr. Orszag's benchmark service, [ ] means that no competition adjustment is necessary. *Supra* Resp. to ¶ 216; *see also* SX PFFCL ¶¶ 483-89.

Response to ¶ 240. No response.

vi. Professor Shapiro's Calculation of an Appropriate "Funneling" Adjustment Does Not Address [ ]

Response to ¶ 241. To set the record straight, the rates Spotify pays for its ad-supported service are not "artificially deflated." [ ]. *See* 8/19/20 Tr. 2968:18-22 (Shapiro) ([ ]); 8/19/20 Tr. 2997:14-24 (Shapiro). [ ]. *Compare* Ex. 5609 ¶ 23 (Harrison WDT) ([ ]), *with* Ex. 4090 ¶ 28 (Phillips WDT) ("[T]he conversion rate to one of our subscription products, however, is low."); Ex. 1100 ¶ 30 (T. Fowler WDT); Ex. 5600 ¶ 28 n.33 (Willig CWDT); SX PFFCL ¶¶ 182-88.

Response to ¶ 242. SoundExchange agrees that the agreements with Spotify [ ] for the ad-supported tier of service, but those agreements contain many other provisions [ ] Ex. 5603 ¶ 73 (Orszag WRT).

Response to ¶ 243. The uplift discussed in this paragraph is necessary but not sufficient to render the rates paid by Spotify for its ad-supported service suitable for use as a benchmark. Professor Shapiro agreed. An adjustment derived from the [ ]. 8/19/20 Tr. 2971:1-13 (Shapiro).

Response to ¶ 244. SoundExchange incorporates its response to ¶ 243, *supra*.

Response to ¶ 245. The cited figures and calculations are understated because they do not include Professor Shapiro's advertising/marketing credit. *See* 8/11/20 Tr. 1372:9-1373:5 (Orszag).

Response to ¶ 246. [ ], 8/11/20 Tr. 1379:23-1380:10 (Orszag), and no economist here recommended starting with a headline per-play rate.

Response to ¶ 247. SoundExchange incorporates its response to ¶ 248, *infra*.

Response to ¶ 248. While Spotify's success in converting users is undisputed, *supra* Resp. to ¶ 241; *see also* Ex. 5186, Pandora admits that "the conversion rate to one of our subscription products . . . is low." Ex. 4090 ¶ 28 (Phillips WDT). As Professor Willig confirmed, using Pandora public projections, [ ]. 8/6/20 Tr. 632:5-19 (Willig). Simulcasters, of course, cannot convert at all. *See* Ex. 2160 ¶ 9 (Leonard CWRT).

On the other hand, free services, by nature of being free, tend to be substitutional because of the fact that "zero is a powerful anchor for consumers." Ex. 5604 ¶ 64 (Tucker WDT). As Professor Tucker explained, services must work hard to overcome this anchor, and it cannot be assumed that simply because a service offers an ad-supported tier, it has successfully implemented the incentives necessary to "nudge" users to become subscribers. 8/17/20 Tr. 2116:13-17 (Tucker)

("It's very easy for a customer to be anchored on a zero price, and, as a result, you have to work hard to be constantly nudging the customer and reminding them of the potential benefits of the premium paid product"); *see also SDARS III*, 83 Fed. Reg. at 65234 ("First, the power of a 'free' alternative is well understood."). Remarking on the provisions negotiated into the Spotify contracts [ ] 8/17/20 Tr. 2122:9-22 (Tucker).

Sirius XM and Pandora misleadingly truncate Professor Tucker's oral testimony when they claim she agreed that Pandora's ad-supported service serves as a funnel to paid subscriptions. Professor Tucker's full answer (which Sirius XM/Pandora cut off after "yes") is: "Yes. So Pandora's free service *could potentially* act as a funnel to its premium service. You know, we talked about churn and so on. But I think my key point is the incentives have to be there for Pandora to want to do that." 8/17/20 Tr. 2350:20-2351:2 (Tucker) (emphasis added). Similarly, Sirius XM and Pandora cite to paragraph 106 of Professor Tucker's written testimony, ignoring her testimony that "I think the key thing, though, which is missing is, if you take 106 out of the context of what I have also written about the need for incentives for this to take place, one might get a slightly misleading impression." 8/17/20 Tr. 2352:6-11 (Tucker). As SoundExchange has previously demonstrated, Pandora by its own admission has not been successful in upselling, Ex. 4090 ¶ 28 (Phillips WDT); *accord* 8/6/20 Tr. 632:5-19 (Willig), and it does not have the same [ ] economic incentives to upsell that Spotify has. *See* SX PFFCL ¶¶ 192-96.

V. PANDORA AND SIRIUS XM'S PROPOSED TERMS SHOULD BE REJECTED, AND SOUNDEXCHANGE'S SHOULD BE ADOPTED

A. Audit Terms

Response to ¶ 249. SoundExchange incorporates by reference its responses to the Services' JPFFCL ¶¶ 328-56. *See also* SX PFFCL ¶¶ 1588-1663.

B. Unclaimed Funds

Response to ¶ 250. It is necessary for the Judges to make some change to the current treatment of unclaimed funds in Section 380.4(b). That provision refers to handling such funds in accordance with state law, including common law. However, the application of state law to Section 112 and 114 royalties is now preempted by statute. 17 U.S.C. § 114(g)(7). There does not seem to be any serious dispute about the need for a change, since Pandora and Sirius XM are proposing a change to this provision as well. Sirius XM and Pandora Second Amended Proposed Rates and Terms at 2. Reverting to the pre-*Web IV* treatment of unclaimed funds is a fair, practical, and efficient way of addressing the matter. *See* SX PFFCL ¶¶ 1578, 1685-94; SoundExchange Proposed Rates and Terms at 15.

Pandora and Sirius XM accuse SoundExchange of proposing to "keep" unclaimed funds in a "windfall" "for itself." SXM PFFCL ¶¶ 250, 252. This rhetoric reflects a profound misunderstanding of statutory license administration. "SoundExchange is not in the same position that an individual Licensor might be with regard to management of its funds." *Web IV*, 81 Fed. Reg. at 26402. By statute, SoundExchange's administrative costs are deductible from royalty distributions. 17 U.S.C. § 114(g)(3). As a result, when unclaimed funds are applied to reduce administrative costs, that results in a rebate of the costs previously paid by artists and copyright owners. SX PFFCL ¶¶ 1691-92. This is the furthest thing from the sort of self-dealing that Sirius XM insinuates. Indeed, as a nonprofit organization, SoundExchange has no use for the money other than carrying out its mission of ensuring prompt, fair, and efficient collection and distribution of statutory royalties. SX PFFCL ¶ 1693. Nor would there be any point in SoundExchange keeping

unclaimed funds for future use, when its current expenses are always paid out of current royalties. 9/9/20 Tr. 5876:21-5877:5 (Ploeger). These features of a nonprofit collective were reasons for SoundExchange's original selection as the collective. *Web I*, 67 Fed. Reg. at 45267-68.

Response to ¶ 251. While Pandora and Sirius XM express opposition to SoundExchange's proposed treatment of unclaimed funds, they have no bona fide interest in the disposition of those funds, "because their responsibilities and direct interest end with the payment of the royalty fees." *Web I*, 67 Fed. Reg. at 45267. The people with an actual interest in the disposition of unclaimed funds are the artist and copyright owner participants in this proceeding. They all join in SoundExchange's proposal. SoundExchange Proposed Rates and Terms at 1.

Sirius XM's opposition to SoundExchange's proposal is rooted in Mr. Barry's beliefs about the possible use of unclaimed funds to support legislative efforts and litigation adverse to statutory licensees. Ex. 4110 ¶¶ 35-36 (Barry WRT). As to legislative efforts, Mr. Barry is simply mistaken. SoundExchange's legislative campaigns are not treated as administrative costs but are separately paid for by its members. *See* Ex. 3023 at 43 ([ ]). As to litigation, it is clear that what Mr. Barry really opposes is licensees being sued by SoundExchange for their underpayment of statutory royalties—as Sirius XM was in a litigation that resulted in Sirius XM paying SoundExchange $150 million. *See* Ex. 5625, App. A ¶ 7 n.2 (Bender WDT); *Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services*, 82 Fed. Reg. 56725, 56735 (Nov. 30, 2017).

Mr. Barry's preference for his employer not to be sued should not affect the Judges' regulations concerning the disposition of unclaimed funds. In addition to being inequitable, that would be illogical. Applying unclaimed funds to reduce administrative costs means rebating them

to artists and copyright owners that paid them in the past. It does not mean saving them to fund future litigation against licensees that underpay their statutory royalties. *See* SX PFFCL ¶ 1692. Unclaimed funds are irrelevant to how SoundExchange would fund a lawsuit against an underpaying licensee. By statute, SoundExchange's costs of enforcement litigation—like its other administrative expenses—are deductible from its royalty distributions. 17 U.S.C. § 114(g)(3)(C). Thus, its spending on enforcement litigation is determined simply by the budget set by its board of artist and copyright owner representatives. 9/9/20 Tr. 5876:21-5877:5 (Ploeger); Ex. 5625, App. A ¶ 5 (Bender WDT). When SoundExchange determines it is necessary to bring an enforcement action against a licensee like Sirius XM to protect the interests of artists and copyright owners, the litigation is paid for out of current royalties. Ex. 5625, App. A ¶¶ 16, 28 (Bender WDT); 17 U.S.C. § 114(g)(3)(C). Using unclaimed funds to rebate past administrative costs will not change that.

Pandora and Sirius XM suggest that SoundExchange's proposal is lacking in transparency. However, SoundExchange's process of using unclaimed funds to rebate administrative expenses is reflected on royalty statements and so is entirely transparent. *See* SX PFFCL ¶ 1694.

Response to ¶ 252. Congress has rejected the idea that statutory royalties should be sent off to states to fund their governments, and as a result current Section 380.4(b) needs to change. *See supra* Resp. to ¶ 250. Pandora and Sirius XM present their proposal as having the advantage of distributing unclaimed funds to artists and copyright owners, but they fail to understand that SoundExchange's proposal would also do that. The key difference between the parties' proposals is that SoundExchange's is workable, while Pandora's and Sirius XM's is not.

First, Pandora's and Sirius XM's proposal is vague and confusing. It refers to distribution "to Copyright Owners and Performers," but it does not clearly say which ones. *See* Sirius XM and Pandora Second Amended Proposed Rates and Terms at 2. Clearly, this cannot be the copyright

owners and performers whose works actually generated the royalties in question—were it that simple, the funds would not be unclaimed. The suggestion seems to be that the recipients should be those whose works were "reflected in reports of usage provided to the Collective for the periods in question." *Id*. However, the proposal is unclear whether that refers to webcasting usage or other usage as well. The proposal also refers to "performance shares of such Copyright Owners and Performers as reflected in reports of usage." However, reports of use do not report "performance shares," and are not always even required to report performances. *See* 37 C.F.R. § 370.4(d)(2)(vii). By contrast, SoundExchange's proposal to rebate administrative costs in proportion to the payment of such costs has a long pre-*Web IV* track record and is well-understood. SX PFFCL ¶¶ 1686, 1692.

Second, Pandora's and Sirius XM's proposal calls for distribution of unclaimed funds with interest. That requires accounting for interest accruals on separate payments made on separate dates over the course of a year by over 3,500 different webcasters. *See* Ex. 5625, App. A ¶¶ 10-12, 33 (Bender WDT). Pandora and Sirius XM have made no showing that SoundExchange has data or systems configured to compute interest on royalties based on payment dates once royalties have been allocated to particular works or payees. *See id*. ¶¶ 13-17. That interest would also have to come from somewhere, and given SoundExchange's funding structure, the only place money to cover an interest expense could come from would be artists and copyright owners in the form of a higher administrative fee. *See id*. ¶ 86. It makes no sense to charge all artists and copyright owners a higher administrative fee to pay only some of them interest along with distributions of unclaimed funds—especially given that the recipients of the unclaimed funds will not generally be the artists or copyright owners whose works generated the royalties. The Judges should adopt SoundExchange's proposed disposition of unclaimed funds.

C. Reporting of Excluded, Directly Licensed Tracks

Response to ¶ 253. The Judges should adopt SoundExchange's proposal concerning the reporting of excluded directly-licensed recordings. *See* SX PFFCL ¶¶ 1679-84.

Response to ¶ 254. It is not obvious why Sirius XM's proposed references to direct licensors should be necessary in a webcasting context. The analogous provision of the SDARS regulations has been in place since *SDARS II*, and it only refers to copyright owners as SoundExchange has proposed here. 37 C.F.R. § 382.23(a)(1)(ii). Regardless, Sirius XM's reporting under the SDARS regulations has proven useful. *See* Ex. 5625, App. A ¶ 125 (Bender WDT). SoundExchange is not opposed to the adoption of its proposed reporting provision with the additional references to licensors that are underlined in paragraph 29 of Mr. Barry's Written Rebuttal Testimony. Ex. 4110 ¶ 29 (Barry WRT).

Response to ¶ 255. SoundExchange incorporates its response to ¶ 254 *supra*.

Dated: October 28, 2020

Respectfully submitted,

By: /s/ David A. Handzo
David A. Handzo
(D.C. Bar No. 384023)
JENNER & BLOCK LLP
1099 New York Ave., N.W., Suite 900
Washington, D.C. 20001
(v) 202-639-6000
(f) 202-639-6066
DHandzo@jenner.com

Counsel for SoundExchange, Inc., Sony Music Entertainment, Universal Music Group, Warner Music Group, the American Association of Independent Music, the American Federation of Musicians of the United States and Canada, the Screen Actors Guild and American Federation of Television and Radio Artists, and Jagjaguwar Inc.

Proof of Delivery

I hereby certify that on Friday, October 30, 2020, I provided a true and correct copy of the SoundExchange's Replies to Pandora and Sirius XM's Corrected Proposed Findings of Fact and Conclusions of Law to the following:

Pandora Media, LLC, represented by Benjamin E. Marks, served via ESERVICE at benjamin.marks@weil.com

National Association of Broadcasters, represented by Sarang V Damle, served via ESERVICE at sy.damle@lw.com

Sirius XM Radio Inc., represented by Benjamin E. Marks, served via ESERVICE at benjamin.marks@weil.com

Educational Media Foundation, represented by David Oxenford, served via ESERVICE at doxenford@wbklaw.com

Google Inc., represented by Kenneth L Steinthal, served via ESERVICE at ksteinthal@kslaw.com

National Religious Broadcasters Noncommercial Music License Committee, represented by Karyn K Ablin, served via ESERVICE at ablin@fhhlaw.com

Signed: /s/ David A. Handzo